EFFECT OF VISITORS AS PATIENTS ON THE WORK OF A SCOTTISH ISLAND PRACTICE

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CONTENTS

SUMMARY

The work of a singlehanded general practice in a Scottish island is described with special reference to the effects of the influx of visitors to the practice area. The work of the practice is increased by up to 30% in the height of the holiday season in July and August.

A study over the three years 1970 to 1972 shows that the principal causes of morbidity in the visitors were respiratory diseases, diseases of the digestive system, and the effects of accidents and violence.

In comparing the morbidity of the visitors with that of the local population in the disease groups with the greatest number of new episodes of illness, the visitors had 55% more digestive diseases, 55% more in the group of allergic, endocrine metabolic and nutritional diseases and 45% more accidents. The practice patients had 250% more prophylactic procedures.

There was little difference in the rates of new episodes in a number of disease groups, respiratory diseases, diseases of the circulatory system, skin diseases, genito-urinary diseases and psychoneurotic disorders, and what differences there were showed as minor differences in some of the age/sex sub-groups.

The illness of visitors, and especially serious illness, posed problems of treatment and management and of practice organisation in a practice without easy access to full hospital facilities.

I hereby declare and affirm that this thesis is entirely my own work and composition.

I acknowledge with gratitude the help and advice of my Advisor, Mr. S.A. Sklaroff, Senior Lecturer, Department of Social Medicine, University of Edinburgh, Professor J.D.E. Knox and the staff of the Scottish General Practitioner Research Support Unit, especially Mr. A. Nicol, Statistician to the Unit, for statistical advice, help and calculations, and Dr. D.L. Crombie, O.B.E., Director of the General Practice Research Unit, Royal College of General Practitioners.

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CHAPTER ONE

INTRODUCTION

The Isle of Arran has been a favourite holiday place in the West of Scotland since the development of the Clyde steamers over one hundred years ago. When I came to the practice of Shiskine in the western half of the Island, I soon found that I had not one practice but two. I had a National Health Service (N.H.S.) list of just under 700 patients scattered over a large area and also another practice of visitors. The work from the latter is concentrated mainly in the summer months from June to September and during that time they provide twenty-five per cent of my work.

I can call this part of my work a practice because over the ten years I have been here a large number of families have returned each year and the same faces and the same names, often with the same diseases, re-appear almost as if they had not been away for eleven months.

The attitude of the general practitioner to the treatment of visitors varies with the type of practice in which he works. Most practices are like the five doctor partnership, in which I previously worked, with 12,500 patients mainly in a new town and only a small number of visitors seeking attention each year. These were a minor inconvenience in the practice routine with an extra form to fill up and submit to the Executive Council and only very occasionally presenting a major medico-social problem.

In a number of practices the care of visitors forms a large part of the work load; this is especially so in holiday areas (1) (2) or in places with a large student or seasonal or mobile working population (3a). Some of these practices rely on the fees for the

treatment of visitors for a sizeable proportion of the practice income and conversely the extra work load in the holiday period or even all the year round may mean that the practice has working in it more doctors than required by the normal work of the practice (4) (5).

There is a third group of practices in the more remote parts of the country which have small N.H.S. lists in large areas and where, so that these populations may have a reasonably accessible medical service, it has been decided that there will be an inducement payment to a doctor to work there which will bring his income from all professional sources up to something a little below the average income for general practitioners in the rest of the country. Many of this type of practice are in places which attract a great number of tourists, often a large influx indeed in relation to the indigenous population and its resources.

In these practices the increase in work load arising from the care of visitors is already considerable at peak holiday periods and there is now a great effort being made by such organisations as the Scottish Tourist Board and the Highlands and Islands Development Board to increase tourism in Scotland generally and in the remote and underdeveloped parts of the country in particular.

It has occurred to a number of people that if tourism is to increase so too will increase the demands on many services, including the health services. Dr. Nicholson of Acharacle (6) wrote a short paper for the Scottish General Medical Services Committee pointing out the increasing pressure from tourism on the already poor public services in areas such as Ardnamurchan and Moidart. A press report (7) of an approach to the Scottish Home and Health Department by the Executive Council for Galloway stated that since 1948 the number of visitors requiring medical care had

risen tenfold by 1971-72 and cited one district where the normal population rose from 1,500 to 8,000 in high summer.

As I became aware of and interested in the different pattern of work in this type of practice from that to which I was previously accustomed, I found that there was little reference in published work to the work load of visitors' treatment in general practice nor any description of their morbidity. Most papers on surveys of work load or morbidity in general practice do not make any reference to these patients or if they do it is in such phrases as "excluding temporary residents..." There are papers such as those in The Practitioner in 1971 (8) which form a symposium in which the approach of each writer is on the diagnosis, treatment and prevention of some disease or injury associated with holiday activity at home and abroad. There are more detailed papers on the hazards of certain sports or specialised situations such as Macdonald and Walker (1) on "The Epidemiology of Accidents - a survey in Aviemore", a detailed study of 1239 accidents seen in one practice in one year; and Cameron (9) on the "Hazards of Ocean Cruises for the Elderly and Infirm" which is a discussion of the difficulties faced by the ship's surgeon and the elderly and infirm on ocean liners but is not a survey of morbidity.

Appleyard's short and witty paper (2) on his "Work in a Seaside Practice" describes situations which all doctors in holiday resorts will recognise but it is written to inform in a general way and is not a study from which can be extracted any information on the real effect of the visiting patients on the work load and morbidity statistics of his practice. Lefever (3a) in an even more popular interview-type article in the medical newspaper "GP" describes the three-doctor partnership in which he works in South Kensington with an NHS list of 8,000 and 2,000 temporary patients annually. In a personal communication (3b) he

gave some details of the types of visitors the practice had as patients and his impressions of the type of complaints with which they presented but he had not any detailed figures on either work load or morbidity.

Pacy (10) writing from a practice in an isolated peninsula in New South Wales gives a detailed study comparing the morbidity over 27 months of 398 tourist patients with 1765 local patients' episodes of illness from a population of 980. His conclusions are: "(i) Tourist morbidity is mainly summer morbidity. (ii) In summer we see more trauma, cardiovascular and psychosomatic disease, and more skin lesions. (iii) In winter there are more inflammatory and infective, and more respiratory and urinary tract disorders. (v) The tourist who is injured or diseased is more likely to be male and in the prime of his productive life. (v) More females develop psychosomatic disorders, particularly in middle age. (vi).The dominating tourist risk is greatest in the second decade, declining afterwards."

It is perhaps not surprising that the Gillie Report (11) does not mention the visitor patient as that committee was dealing with the broad principles of the family doctor's field of work. It is, however, surprising that the Birsay Report on General Medical Services in the Highlands and Islands (12) dealing in detail with many aspects of the work of the family doctor in the Scottish Highlands and Islands mentions visitors only on three occasions. Twice in the section on the pool system of remuneration where the existence of a fee for the treatment of a visitor is stated and once in the chapter on the "Role and Deployment of General Practitioners" where the Report states "The popularity of the Highlands as a holiday area is also relevant; one practitioner with a list of about 1,300 patients told us he was at risk for a population of at least 5.000 at peak holiday week-ends".

As the broad spectrum of visitors' morbidity became obvious to me and as the work load built up each summer in my practice at Shiskine on the Isle of Arran and as I found that no one really knew what the effect of the visitor patient really was on a practice, or if anyone did no one in this country had written it down in an article known to the libraries of the British Medical Association or Royal College of General Practitioners, so the questions to which I wanted answers became crystallised as -

(1) What effect on work load do visitors have?

(2) From what illnesses and injuries do they suffer?

(3) In what way, if at all, does their morbidity differ from that of the local population, and if so, are there any particular groups at risk or any particular causes identifiable?

(4) Does the effect on work load require different or additional facilities?

(5) Are there any special problems of medico-social care?

CHAPTER TWO

NATIONAL HEALTH SERVICE LISTS AND CLAIMS FOR TREATMENT OF VISITORS IN SCOTLAND AND IN ARGYLL AND BUTE IN PARTICULAR

There were, until the reorganisation of the N.H.S. on 1st April, 1974, 25 N.H.S. Executive Councils, each responsible for general medical services in its own area. The number of individuals on the general practitioners' lists in these areas varied from just over 13,000 in Sutherland to over 1 million in Glasgow. From the Research and Intelligence Unit of the Scottish Home and Health Department (20a and b) I have received the figures for the years 1st April, 1966 to 31st March, 1971 showing the annual number of patients on the practitioners' lists and the annual number of claims for treatment of temporary resident patients (T.R. Claims). The average number of patients on the N.H.S. lists and the average number of T.R. Claims made annually in each area are set out in Table 1 together with a calculation of the ratio of T.R. Claims to 100 patients on the N.H.S. lists.

The most populous areas of Scotland do not have the largest number of T.R. claims - this is to be expected in a country where many of the most popular holiday regions are in the more remote parts, though it is perhaps surprising to see that Edinburgh with a population of nearly half a million and a great tourist appeal provided only 13,000 T.R. claims.

The comparison of the extra work load involved in the care of visitors between the various Executive Council areas can best be seen from the ratio of T.R. claims per 100 patients in the N.H.S. lists. The incidence of T.R. claims varied from 1 : 100 in Glasgow, Dundee and Renfrewshire to 29 : 100 in Argyll and Bute. Argyll and Bute Executive Council Area had not only the greatest ratio of T.R. claims to N.H.S.

TABLE 1 Average Annual Number on N.H.S. Lists and of T.R. Claims for each Executive Council from 1/4/66 to 31/3/71 and Ratio of T.R. Claims per 100 on N.H.S.

Executive Council	Average No. on N.H.S. Lists	Average No. of T.R. Claims	Ratio T.R. Claims per 100 on List
Non Crofting Counties less Bute			
City of Glasgow	1,032,913	15,083	1
Lanark	627,007	8,388	1
City of Edinburgh	491,490	13,381	3
Renfrew	364,272	5,487	1
Ayr	361,724	17,724	5
Fife	326,641	12,951	4
Lothians and Peebles	311,232	9,594	3
Stirling and Clackmannan	250,517	6,929	3
Dumbarton	228,440	5,331	2
City of Dundee	191,643	2,230	1
City of Aberdeen	187,999	4,638	2
Aberdeen and Kincardine	170,262	6,159	4
Perth and Kinross	137,449	7,470	5
Banff, Moray and Nairn	103,713	7,475	7
Angus	96,886	4,864	5
Dumfries	89,563	3,490	4
Roxburgh, Berwick and Selkirk	86,224	3,266	4
Galloway	56,547	5,320	11
Non Crofting Counties less Bute	5,114,522	139,760	3
Crofting Counties Plus Bute			
Inverness	85,413	7,920	9
Argyll and Bute	69,692	20,563	29
Ross and Cromarty	57,658	4,846	8
Caithness	28,251	1,273	4
Orkney	18,059	976	5
Zetland	17,434	1,568	9
Sutherland	13,221	2,454	19
Crofting Counties Plus Bute	289,728	39,600	14
All Scotland	5,404,250	179,360	3

patients but also had the greatest number of T.R. claims of all the Areas, though in terms of the number of individuals on the N.H.S. lists it was 19th of the 25 Executive Councils.

Table 1 has been divided into two sections to separate the mainly more populous non-crofting counties from the seven crofting counties plus the County of Bute. The County of Bute is not within the seven crofting counties but the general medical services were administered by the one Executive Council with those of Argyll which is a crofting county and it has a similar distribution of population and similar problems of transport and poor communications as the rest of the Highlands and Islands. In the Crofting Counties and Bute the ratio of T.R. claims to N.H.S. list individuals varied from 4 : 100 to 29 : 100 with only one Area, Caithness, being less than 5 : 100. In the rest of Scotland this ratio varied from 1 : 100 to 11 : 100 with only two areas having more than 5 : 100 and these were Banff, Moray and Nairn, and Galloway, both areas of low population with a considerable tourist influx.

Argyll and Bute is made up of seven large islands, numerous small islands and a mainland mass much broken up by lochs.

The Clerk to the Argyll and Bute Executive Council has provided me with the figures for each practice in the Area for the years 1967 to 1972 (21). These figures are summarised as averages in Table 2.

In 1967 there were 47 practices in Argyll and Bute, 16 in the islands and 31 on the mainland; there were 62 principals in these practices, 22 in the islands and 40 on the mainland. Reorganisation of some of the practices in Dunoon and Oban reduced the number of mainland practices and of total number of practices to 28 and 44 respectively and the number of principals on the mainland to 37 and in the whole area to 59.

TABLE 2 Average Annual Number on N.H.S. Lists and of T.R. Claims for each practice in Argyll and Bute 1/12/67 to 31/12/72.

Practices	No. of Doctors	Average No. on N.H.S. List	Average No. of T.R. Claim	Ratio of T.R. Claims per 100 on List
ISLAND PRACTICES				
Rothesay Bute	3	4,068	1,324	33
Rothesay Bute	2	2,719	989	36
Lamlash Arran	2	2,701	2,015	75
Rothesay Bute	2	1,707	2,627	154
Millport Cumbrae	2	1,334	2,240	168
Bruichladdich Islay	1	2,542	212	8
Bowmore Islay	1	1,732	184	11
Port Ellen Islay	1	1,321	326	25
Tiree	1	919	155	17
Tobermory Mull *	1	802	198	25
Salen Mull	1	788	258	33
SHISKINE ARRAN	1	680	349	51
Bunessan Mull	1	543	190	35
Jura	1	233	57	24
Coll	1	149	58	39
Colonsay *	1	142	52	37
Island Practices	22	22,380	11,234	50
MAINLAND PRACTICES				
Dunoon +	8-6	10,515	2,131	20
Oban +	7-6	8,956	2,549	28
Campbeltown	3	5,716	538	9
Lochgilphead/ Ardrishaig	3	4,953	774	16
Connel/Taynuilt	2	2,301	245	11
Campbeltown	1	2,040	308	15
Tarbert	1	1,737	242	14
Strone	1	1,283	294	23
Ballachulish	1	1,129	377	33
Tighnabruaich	1	1,121	432	39
Inverary	1	1,117	171	15
Strachur	1	1,096	133	12
Muasdale	1	946	146	15
Dalmally	1	824	154	19
Acharacle	1	784	233	30
Carradale	1	712	76	11
Kinlochleven *	1	668	106	16
Appin	1	605	70	12
Inellan	1	561	244	43
Southend	1	411	119	29
Lochaline	1	393	87	22
Lochgoilhead	1	377	169	45
Mainland Practices	40-37	48,254	9,598	20
All Argyll & Bute	62-59	70,634	20,832	29

*Each of these practices has figures for 5 years only.
+Reorganisation of practices in Dunoon and Oban makes averages of separate practices impossible to calculate.

In the islands the practices had on average just over 1000 patients and made some 500 T.R. claims per doctor. The ratio of T.R. claims to N.H.S. patients varied from 8 : 100 to 168 : 100 and averaged 50 : 100. The mainland practices had around 1,250 patients and made about 250 T.R. claims per doctor. The ratio of T.R. claims to N.H.S. patients varied from 9 : 100 to 45 : 100 and averaged 20 : 100.

The high percentage of T.R. claims made by the doctors in the more remote areas of Scotland can be summarised as follows:-

The doctors of the seven crofting counties with Bute looked after 5.4% of the N.H.S. patients of Scotland and made 22.1% of the T.R. claims. The doctors of Argyll and Bute had 1.3% of the N.H.S. patients and made 11.5% of the T.R. Claims.

The distribution of N.H.S. patients and T.R. patients in the Argyll and Bute Executive Council Area is shown in Table 3.

TABLE 3 Distribution of N.H.S. patients and T.R. Claims in Argyll and Bute.

	Percentage of N.H.S. Patients	Percentage of T.R. Claims
County of Argyll	81.2	54.2
County of Bute	18.8	45.8
Comprising		
Isle of Bute	12.1	23.7
Isle of Arran	4.8	11.3
Isle of Cumbrae	1.9	10.8

It will be seen that the County of Bute had a much greater number of the visitors who required medical attention in proportion to the size

of its resident population and that within the County of Bute the Isles of Cumbrae and Bute had a great proportion of these claims.

There are 45 practices in Argyll and Bute, though because of the changes that have taken place in Dunoon and Oban it is confusing to try to show these town practices separately in Table 2. Twenty of these practices had less than 1,000 N.H.S. patients (six have less than 500), twenty have between 1,000 and 3,000 and five have between 3,000 and 6,000.

The pattern is repeated in the rest of the Highlands and Islands. The Shiskine practice is not atypical in having a small list.

From Table 2 it will be seen that there were five practices with a ratio of T.R. claims to N.H.S. list of 50 : 100 or over. It is interesting that they are all in the County of Bute. There are, however, a number with a ratio of more than ten times that of Scotland as a whole. Again this practice is not atypical in having to provide care for a large number of visitors.

CHAPTER THREE

THE PRACTICE, ITS LOCAL AND VISITING POPULATIONS.

The situation, population and work load of the practice along with a brief statement of the morbidity have already been described (13). In short, it is a single-handed practice with a list of National Health Service patients of around 690. It is based on the doctor's house at Shiskine (Figure 1 - Page 13)and is supported financially by an inducement payment from the Scottish Home and Health Department. The area of the practice extends northwards over eighteen miles to Lochranza and southwards to Kildonan fourteen miles away. The Isle of Arran War Memorial Hospital is at Lamlash, fourteen miles to the east; the hospital has twenty general beds and five maternity beds, is a general practitioner hospital and there is appointed to work in it a part-time consultant surgeon, but who has to live and be available full time on the island.

At Lamlash is based the other medical practice on the island, a two-man partnership who employ an assistant in the holiday season and to help from time to time with off-duty relief in that practice. The two practices overlap considerably and it is only in the district of Shiskine and Blackwaterfoot that I have virtually all the population on my N.H.S. list.

The main occupation of the practice population is farming. In 1970 I made a count of the people on my list aged between 15 and pensionable age. There were 173 men aged between 15 and 65 and 159 women aged between 15 and 60. Of these 80 were engaged in farming, mostly in family farms - women were counted as farming only when they gave the major part of the day to farm work around the year, 64 were housewives, 44 were in full-time

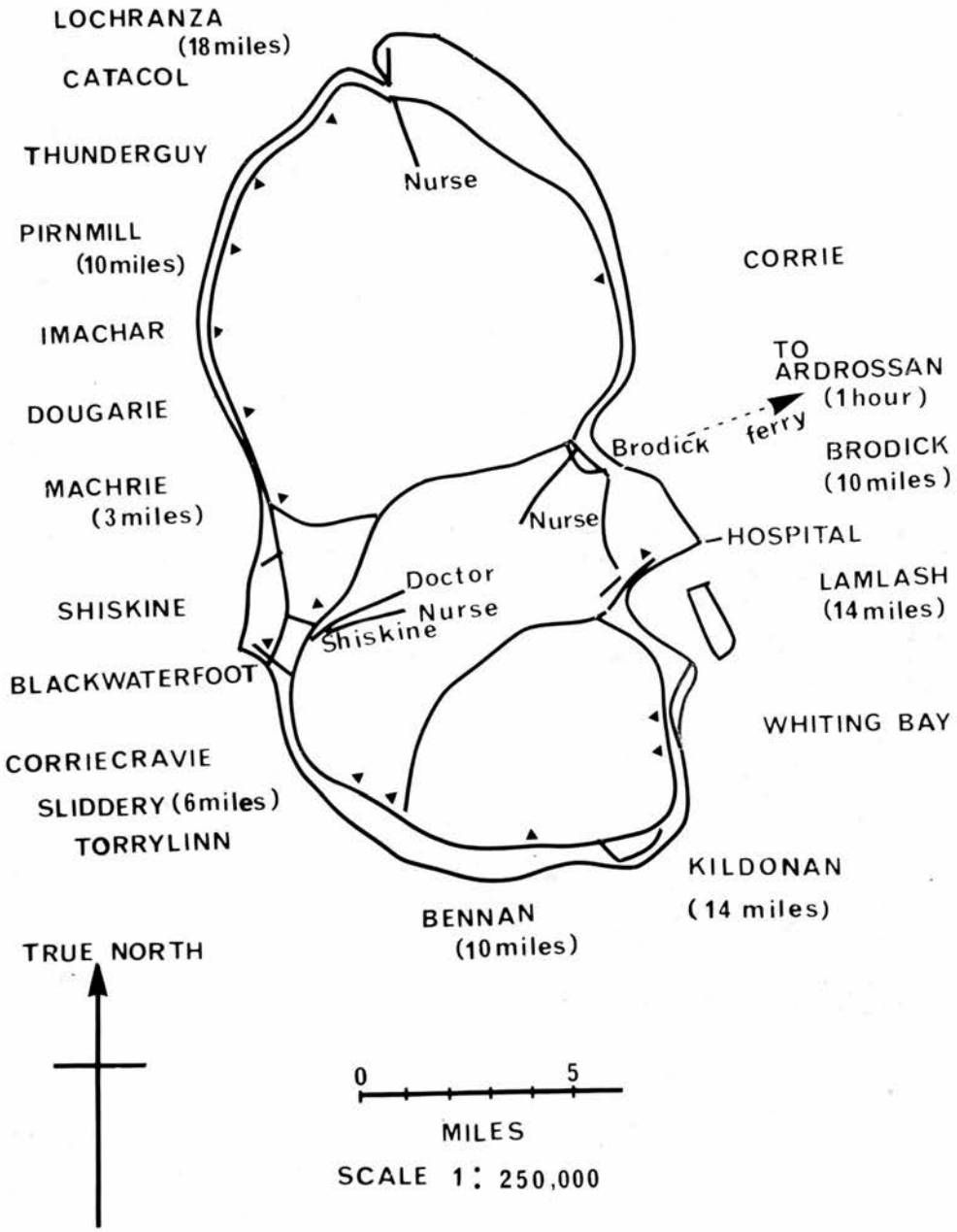


FIGURE 1

OUTLINE MAP OF ARRAN
WITH DISTANCES FROM
DOCTOR'S HOUSE AT SHISKINE.

education, retired early, unemployed or chronic sick, 37 were in hotels and boarding houses. These formed two thirds of the population of working age. As proportions these figures are 1 in 4 farming, 1 in 5 housewives, 1 in 8 not gainfully employed and 1 in 9 in tourism; and this last gives all the year round employment to only a few.

The size of the practice list quarterly and the average size annually is set out in Table 4 and also included are the quarterly and annual numbers of claims for the treatment of visitors to the practice area.

Table 4 N.H.S. list quarterly and average for year.
T.R. Claims quarterly and total for year.

Year and Quarter		N.H.S. List		T.R. Claims	
		Quarterly Number	Yearly Average	Quarterly Number	Yearly Total
1965	1	694		7	
	2	692		61	
	3	638		176	
	4	630	663	3	247
1966	1	622		7	
	2	638		67	
	3	668		236	
	4	666	648	15	325
1967	1	657		14	
	2	661		84	
	3	666		242	
	4	666	660	10	350
1968	1	673		13	
	2	659		110	
	3	656		230	
	4	649	659	7	360
1969	1	674		10	
	2	668		74	
	3	690		165	
	4	687	680	20	269
1970	1	683		18	
	2	688		93	
	3	685		252	
	4	692	687	17	380
1971	1	694		14	
	2	681		97	
	3	686		189	
	4	690	688	37	337
1972	1	698		13	
	2	693		104	
	3	690		259	
	4	701	696	27	403

Although the Shiskine practice is a small one numerically, only ten of the thirty-seven practices in Argyll and Bute having fewer patients on the N.H.S. List (Table 2), it covers a large area. In this aspect it is similar to most of the other practices in the Highlands and Islands of Scotland. Even in the larger towns of this part of the country the medical practitioners may have to travel many miles into the surrounding countryside to attend to patients.

As is also seen in Table 2 the greater number of the practices are single-handed and even the partnerships are mainly of two or three. In the towns, such as in Rothesay (5), health centres are beginning to open, but in the main over wide areas the general medical services are provided by doctors working alone as dispensing doctors and often providing a good proportion of the hospital service by their appointment to general practitioner hospitals.

The round the clock responsibility may include, for reasons of poor transport links with the larger hospital centres and especially in times of bad weather, sole responsibility for serious cases for many hours or even days.

Like the local population, the visitors may also be living in houses and caravans in remote places and although there are many hotels in the Highland and Island areas the practice of the local residents letting their houses to holiday makers in the summer ensures that the visitors in the rural areas are scattered throughout the practice rather than being concentrated in a few hotels.

This practice is not so isolated as many in Table 2 and has access to a cottage hospital fourteen miles away with the services of a consultant surgeon.

When someone is away from home and needs to seek medical advice he can ask a doctor on the N.H.S. medical list to accept him for treatment as a Temporary Resident. This acceptance of the patient by the doctor is for a period, or periods, of three months if the patient should stay in, or revisit, that area during that time. The number of T.R. claim forms which a doctor submits shows the number of individual persons whom he has accepted for care but not the number of episodes of illness these patients have had nor the number of consultations they have had during the illness.

The visitor patients come to the doctor only when they feel that there is a need for medical advice, so that they are a self selected group.

From the practice list and its age/sex register there can be calculated morbidity rates for the local population. An estimate of the number of visitors at risk in the practice area has been inferred from the new episode morbidity and rates have been calculated from that estimate (see Appendix 4).

An enumeration of the actual visiting population is an impossibility. McLellan (14) in his book on The Isle of Arran calculates from the Isle of Arran Tourist Association's Accommodation Register for 1968 that in the 67 hotels and boarding houses and the 331 houses available for renting there is a total of 3,530 beds for visitors, this total does not include youth hostels, camp and caravan sites and the increasing number of houses owned by visitors who come at holiday times and at weekends several times a year, nor does the 3,530 include accommodation for seasonal hotel workers nor friends and relations of islanders staying in private houses as guests.

In July and August it is very difficult to find accommodation and it is likely then that the local population of 3,575 (15b) is more than doubled at the peak of the summer season.

Another problem in attempting to count the visitors is that the length of stay can vary greatly. Many visitors in summer stay for a month, especially those in the furnished houses, some of those who own their houses spend the equivalent of five or six weeks, but a week or a fortnight is quite a common stay in the hotels and boarding houses.

The Highlands and Islands Development Board (16) whose area covers the seven crofting counties - Orkney, Zetland, Caithness, Sutherland, Ross & Cromarty, Inverness-shire and Argyll - but does not include the County of Bute of which Arran is a part - estimates that two million tourists visited the Board's area in 1971 and that the average number of tourists resident on any one night in July and August is estimated at two hundred thousand. The actual "peak" figure for the summer is, of course, higher and that for the off season, very much lower. Of these tourists, probably about half come from England and Wales, much of the remainder from Scotland and an estimated five to ten per cent from elsewhere. The average length of holiday appears to be around seven to ten days.

The Scottish Tourist Board (17) give the following figures of tourism for 1971 in Scotland extracted from three surveys - The British National Travel Survey, and British Home Tourism Survey and the International Passenger Survey:-

All trips by British People lasting more than 1 night - 11.4 million

Holidays by British People lasting more than 4 nights - 3.91 million

and also state that of the 7.20 million overseas visitors to the United Kingdom in 1971 10 - 12% visited Scotland, i.e. approximately 800,000. The average length of a tourist's stay in Scotland is given at 5.2 nights if all trips are considered and 9.7 nights if holidays of more than 4 nights only are considered.

Age/Sex distribution and addresses of the patients who consulted 1970/1972

The age/sex distribution of the patients registered on the practice list in March, 1971 is shown as a histogram in five - year age groups in Figure 2 and with it for comparison is a similar diagram, Figure 3, of the distribution of the population of Scotland constructed from the Census 1971 (15a).

It will be seen that the population at risk in the registered patients differs from that of the Country as a whole in being deficient in the working age groups, 15 to 65, and in having an excess of people over the age of sixty five.

Because the enumeration of the visiting population at risk was not possible and only an estimate of that population can be made I include here details of the visitor patients and the practice list patients who consulted during the time of the survey. Figures 4 and 5 give the age/sex profiles of all the individuals who had at least one consultation for a new episode of illness in the years 1970-1972 for the visitors and the practice list patients respectively.

In comparing the two groups a similar difference is seen as was noted between the practice list and Scotland, there being a smaller number of people in the fifteen to sixty five year old groups and an increase in the over sixty five year olds in the patients from the practice list.

The number in each five year age group is small and when further subdivided later into disease groups the numbers in each group become too small to make comparisons meaningful; Table 5 gives the number of people in the larger groups 0 - 14, 15 - 44, 45 - 64, and over 65, and also the percentage distribution.

FIGURE 2 AGE SEX DISTRIBUTION OF PRACTICE LIST MARCH 1971

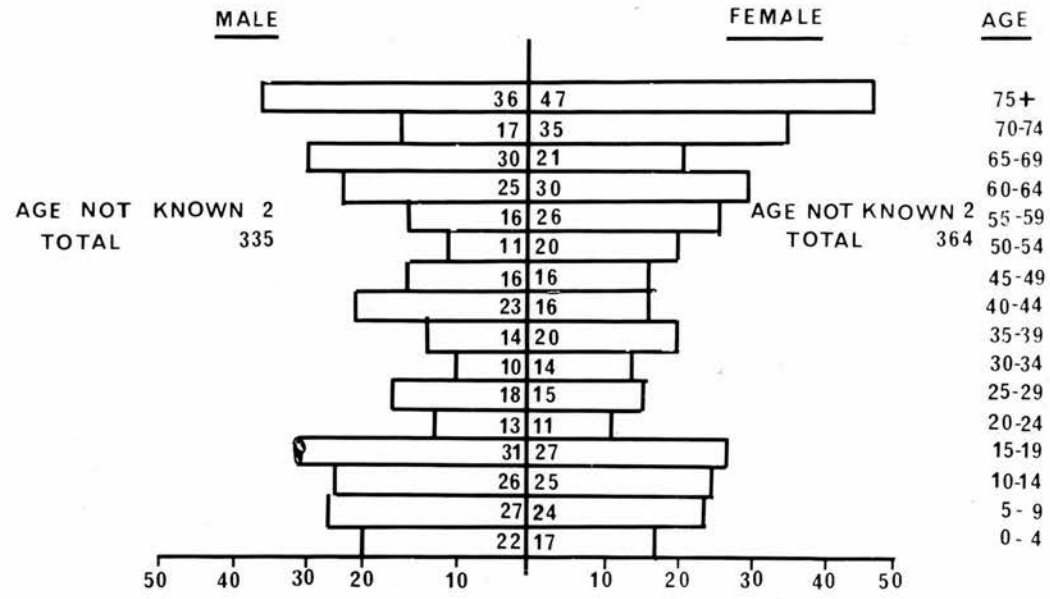


FIGURE 3 AGE SEX DISTRIBUTION OF SCOTTISH POPULATION APRIL 1971

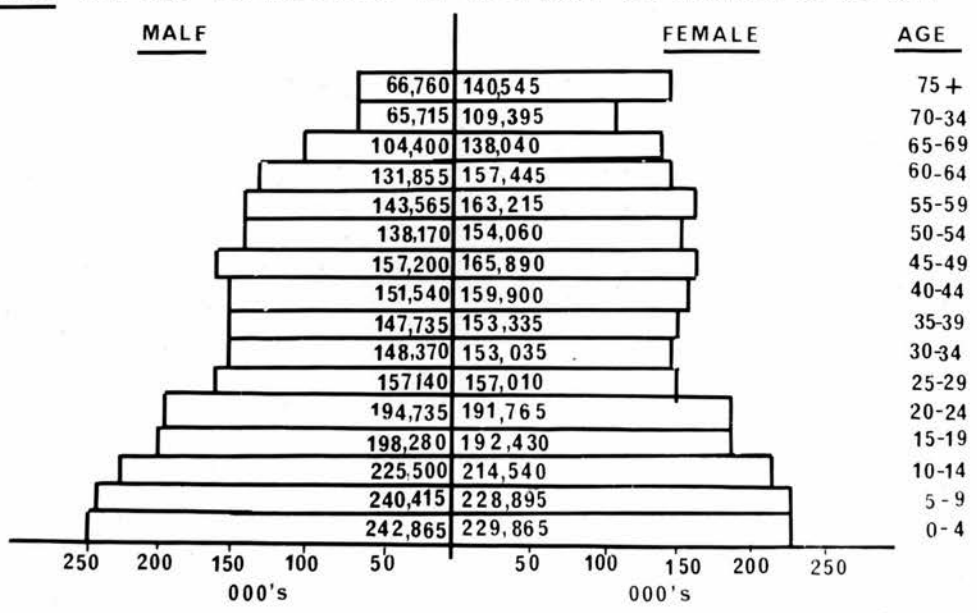


FIGURE 4 AGE SEX DISTRIBUTION OF VISITORS WHO CONSULTED IN 1970-72

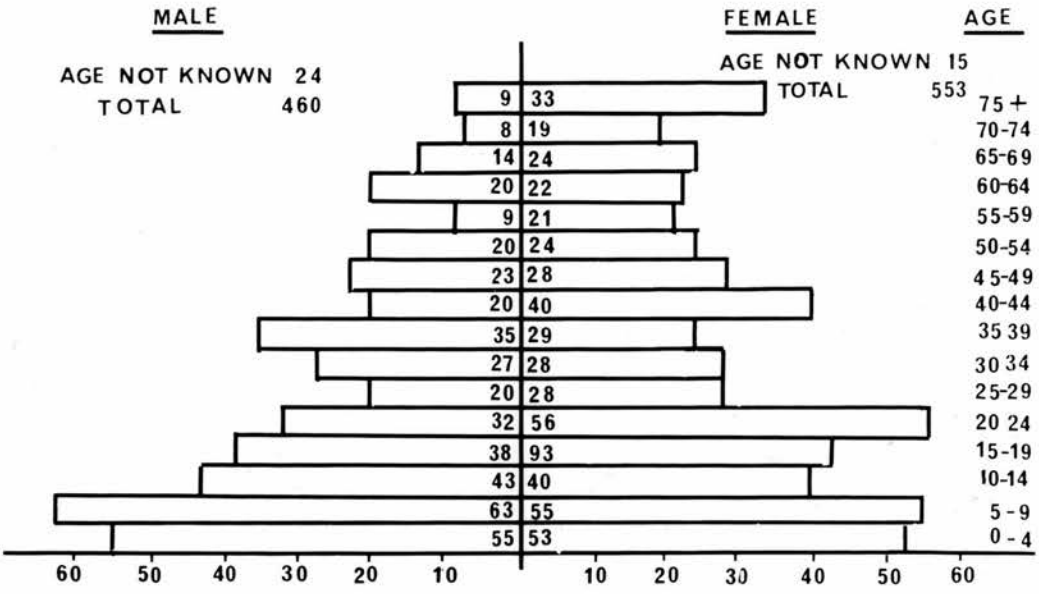
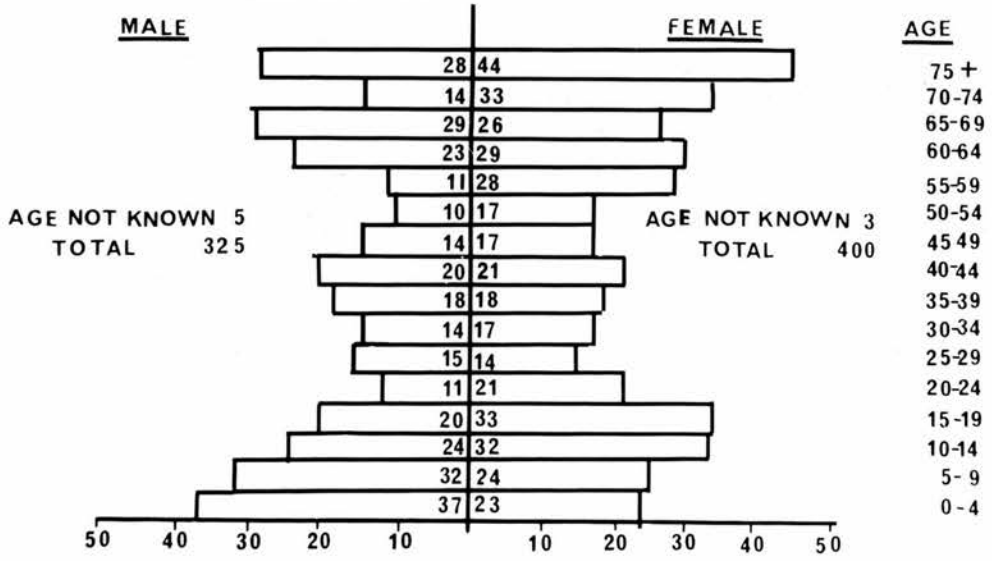


FIGURE 5 AGE SEX DISTRIBUTION OF PRACTICE PATIENTS WHO CONSULTED WITH NEW EPISODES OF ILLNESS 1970 - 1972



There is a slight excess of females over males consulting in both groups and the ratio of 55:45 is the same for both groups.

Table 5 Age Sex Distribution of Patients with new episode of illness, 1970-1972

	Visitors			Practice Patients		
Age Groups	No.	%	% of all patients	No.	%	% of all patients
Males						
0 - 14	161	35.0	9.3	93	28.6	5.3
15 - 44	172	37.4	9.9	98	30.2	5.6
45 - 64	72	15.7	4.1	58	17.9	3.4
65 +	31	6.7	1.8	71	21.8	4.1
Not Known	24	5.2	1.4	5	1.5	0.3
Total	460	100.0	26.5	325	100.0	18.7
Females						
0 - 14	148	26.8	8.5	79	19.5	4.5
15 - 44	219	39.6	12.6	124	31.0	7.1
45 - 64	95	17.2	5.5	91	22.75	5.2
65 +	76	13.7	4.4	103	25.75	5.9
Not Known	15	2.7	0.9	3	0.75	0.2
Total	553	100.0	31.9	400	100.0	22.9
Both Sexes						
0 - 14	309		17.8	172		9.8
15 - 44	391		22.5	222		12.7
45 - 64	167		9.6	149		8.6
65 +	107		6.2	174		10.0
Not Known	39		2.3	8		0.5
Total	1013		58.4	725		41.6

In the visitors the females predominate 22 to 17 in the 15 - 44 age group, 9 to 7 in the 45 - 64 age group and 7.5 to 3 in the over sixty-fives, in the other groups the differences are slight.

In the practice patients there are more males than females in the under 15 age group by 13 to 10, females predominate by 17 to 13.5, 12.5 to 8 and 14 to 10 in the 15-44, 45-64 and over 65 groups respectively.

In comparing the visitors with the practice list patients it is seen that in the under 44 age groups in both sexes there is a greater percentage of visitors than practice patients. In the 45-64 age group the difference is only slightly more for visitors in each age group and in the over 65 year old patients it is the practice patients who presented with the greater number of new episodes. The group with the greatest percentage of all is female visitors in the 15 - 44 age group, this group includes a number of girls in the late teens and early twenties who are employed as summer staff in hotels and boarding houses and who are living in the island for a much longer time than the holiday-makers often for 10 to 12 weeks and so are more likely to be ill.

Geographical Distribution of Patients

The distribution within the island of the patients, both on the practice list and visitors, who consulted in 1970-1972 is shown in Table 6.

Table 6 Arran addresses of patients who consulted in 1970-72

Address	Visitors		Practice Patients	
	No.	%	No.	%
Blackwaterfoot and Shiskine	578	57.00	359	49.5
Machrie and Dougarie	112	11.00	77	10.6
Imachar and Pirnmill	116	11.00	72	9.9
Thunderguy to Lochranza	88	8.8	74	10.2
Corriecravie to Torrylinn	53	5.2	62	8.6
Bennan to Kildonan	48	4.7	64	8.8
Other and Not Known	18	1.8	17	2.4
	1,013	100.0	725	100.0

A greater number of the visitors than practice patients lived in the Blackwaterfoot and Shiskine area and the district up to Pirnmill, ten miles to the north, than in the rest of the area, the percentages being 79%

of visitors and 70% of practice patients. The reasons for this are that, though a number of the residents in between Machrie and Pirnmill are themselves patients of the other practice, the visitors from these areas tend to visit the nearest doctor's surgery in Shiskine, in the same way visitors in the southend of the island tend to go to the surgeries nearer to them in Whiting Bay and Lamlash. Also, and especially from the more peripheral parts of the practice, visitors who are going to the main villages of Brodick, Lamlash and Whiting Bay will, at the same time call on the doctor there if there is a suitable consulting time.

Another reason, again more frequently from the further away parts of the practice, is that visitors call at the hospital in Lamlash as they now do at the casualty departments of their home-town hospitals and expect to find resident medical staff constantly on duty to attend to them. As it is a general practitioner hospital this work load becomes the responsibility of my colleagues in the other practice who, living in Lamlash, are appointed by the Hospital Board as Casualty Officers.

Table 7 Home addresses of Visitors consulting 1970-72

Home Address	No.	%
Scotland	761	75.1
Rest of U.K.	224	22.1
North America	5	0.5
Europe	5	0.5
Other	7	0.7
Not known	11	1.1
	1,013	100.0

Three-quarters of the visitors had home addresses in the rest of Scotland (Table 7) and at least 97.2% of them had United Kingdom addresses. Of the few with addresses abroad some were Arran born or

with Arran relatives or members of one of the many families who have holidayed in Arran over a long number of years and over several generations.

Such differences that there are in the morbidity of the visitors from that of the country as a whole are not due to differences in the home background, except insofar as they might be due to differences between the morbidity patterns of Scotland and the rest of the U.K.

CHAPTER FOUR

METHOD AND DEFINITIONS.

When a patient is seen a clinical note is made either at the time or soon after, and almost invariably within twenty-four hours. The notes are made in the medical duplicating books described by Lyon (18). These provide a top gummed copy which, in the case of the patients whose medical records I have, is stuck on to the continuation cards in the person's record envelope and the carbon copies provide a continuous day book on bound duplicate sheets. These books solve a problem in that there is a permanent record of the visitor patient. It is a record, however, that has the disadvantage that it is in chronological order rather than alphabetical but this has not proved to be a great difficulty in practice because the visitors' illnesses tend to be of short duration and in most cases the visitor is only living in the area for between one and four weeks.

All direct consultations are coded, usually on the following morning, according to the Classification of Morbidity of the Royal College of General Practitioners (19). This is based on the "long" list of The International Classification of Diseases and Causes of Death. All diseases, or, if not possible to classify them as diseases, the presenting symptoms, made as separate complaints by the patient are coded separately, but no disease or symptom is coded if it does not form part of that particular consultation.

Indirect consultations such as telephone advice or repeat prescriptions collected without the patient being seen by the doctor are not coded and have not been included in this survey. The number of these is small and is even smaller for the visitors.

All new episodes of illness are marked to distinguish them from return consultations. A first consultation of a visitor with me for any illness is recorded as a new episode even if it is for the treatment of a previously existing complaint.

From the day books it is easy to keep a record of the different types of consultation and these are noted as attendances at the surgery, home visits or hospital visits for both the practice patients and for the visitors.

A card was designed on which was recorded the particulars of the visitor patient. On this was noted name, date of birth, address in Arran, home address, dates of signing T.R. claim forms, the code of the principal complaint and of any other if advice was sought and the date on which that complaint was first made, the number of consultations for each episode and finally a note of any referral to hospital or other special point.

I, at first, attempted to record the marital status and occupation as well as the above details, but in busy times it was too time-consuming, working single-handed without secretarial help at consulting times, to see the patient, dispense, record the clinical findings and do other than enter the details on the T.R. Claim form (name, birth date, Arran and Home addresses) and so no figures for marital status or social class are available for the visitor patients in this survey.

All visitors consulting in 1970-71-72 were recorded in this way and the same card was used for those who returned more than once whether it was in the same or a subsequent year.

The information on these cards for the visitors and that on the NHS record cards of the patients on my own practice list was transferred to Cope-Chat punched cards for counting and analysis.

As far as possible the terms used are those defined in A General Practice Glossary (22).

I have not used the term "registered" for patients but for easier distinction refer to

Practice Patients - Those registered on the NHS list of my practice in Shiskine, and

Visitors - those patients, receiving care temporarily while away from home, accepted as temporary residents on the NHS T.R. claim form.

This practice has no private patients and all visitors were made NHS temporary residents whether registered elsewhere or not, with the exception of one American who was anxious to pay a fee.

Direct Consultations only were counted in this survey, that is those involving the meeting of the doctor and patient.

Surgery Attendance is the attendance of the patient at the consulting rooms, including any of the three branch surgeries.

Home visit is a visit by the doctor to the patient at his home, including the temporary home of the visitor.

Hospital Visit is a visit by me to a patient in the Isle of Arran War Memorial Hospital and one such visit was recorded for each visit to each patient in hospital even if several patients were seen at one attendance at the hospital (but see below for one exception to this).

If at a consultation two or more medical conditions were discussed that consultation was recorded as one consultation in the survey of work load but as two or more in the morbidity survey.

Dispensing of drugs was not recorded as a separate item of service although a case could be made for so doing because in most practices it is a service provided by the chemist and only in thinly populated areas is it undertaken by the doctor or a dispenser employed by the doctor.

CHAPTER FIVE

PATTERN OF CONSULTATIONS IN THE PRACTICE.

In Figure 6 is shown the monthly total of all direct consultations for the years 1965 to 1972 for the patients on the practice list, for the visitors and for the sum of these which is the whole work load. The numbers from which these graphs were drawn are given in full in Appendix 1.

The total work loan increased from 1965 to 1968, fell in 1969, increased in 1970 and has fallen gradually since. The busiest months of the year are seen to be June - once, July - four times and August - three times.

This is the opposite of the pattern accepted as being the normal in most practices and the cause of the peaks in work load in the summer can be seen in the lowest line of the graph. This is the number of consultations by visitors where the peak is in July five times and in August thrice. The least busy months for the visitors are early and late in the year with February being most frequently the quietest at four times, March being once, November thrice and December twice (in two years there were two months with an equally low figure). In these eight years there have been only two months, February and November 1965, when there was no consultation by a visitor.

Looking at the middle, interrupted, line the pattern of consultations for my own patients is seen to be much more irregular. The impression that I had formed that my own patients came less in the summer and more often in the winter is not supported by the facts that though January and March appear as the busiest months twice and once respectively May appears four

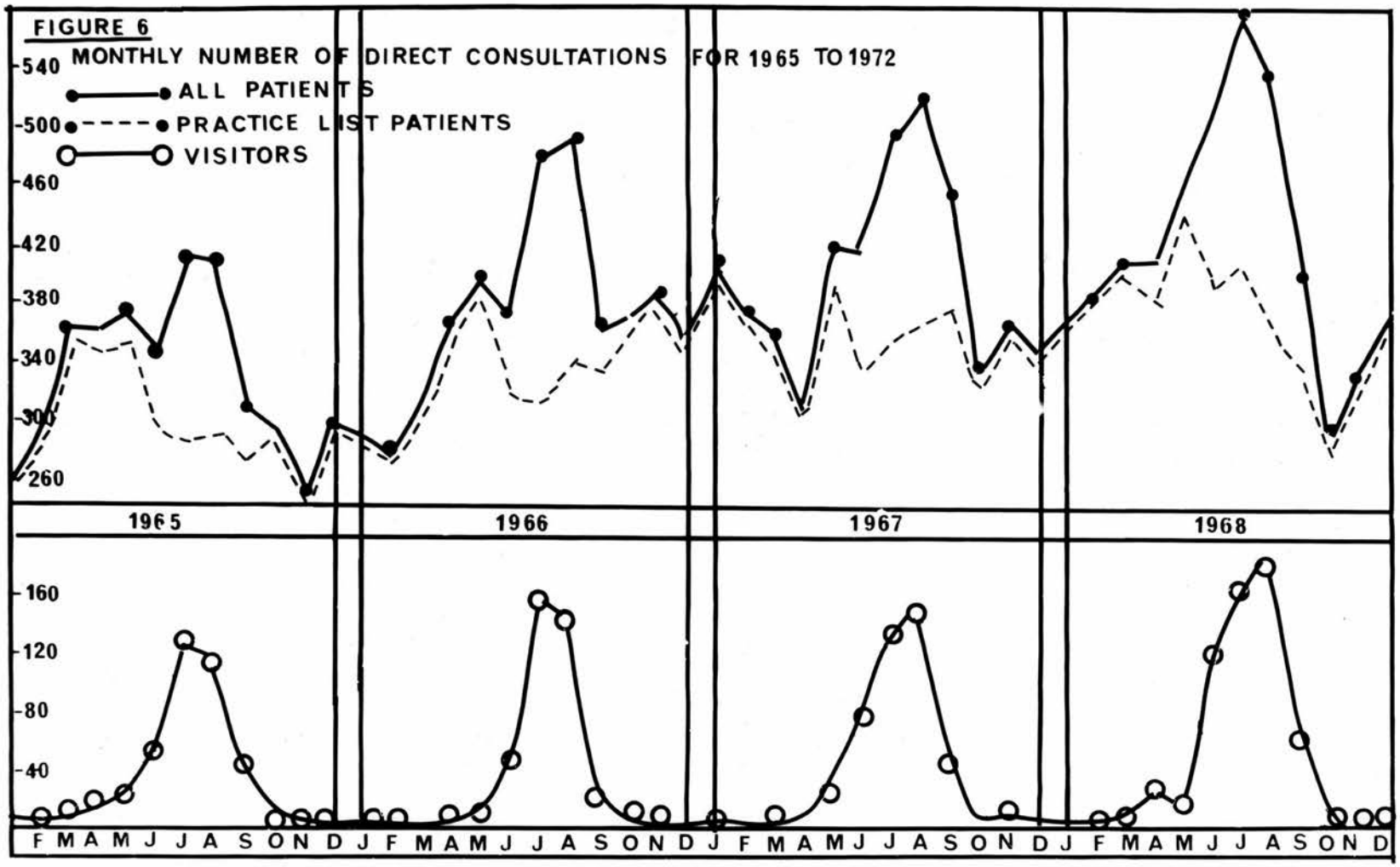


FIGURE 6
MONTHLY NUMBER OF DIRECT CONSULTATIONS FOR 1965 TO 1972
ALL PATIENTS
PRACTICE LIST PATIENTS
VISITORS
540
500
460
420
380
340
300
260
160
120
80
40
1965
1966
1967
1968
F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D

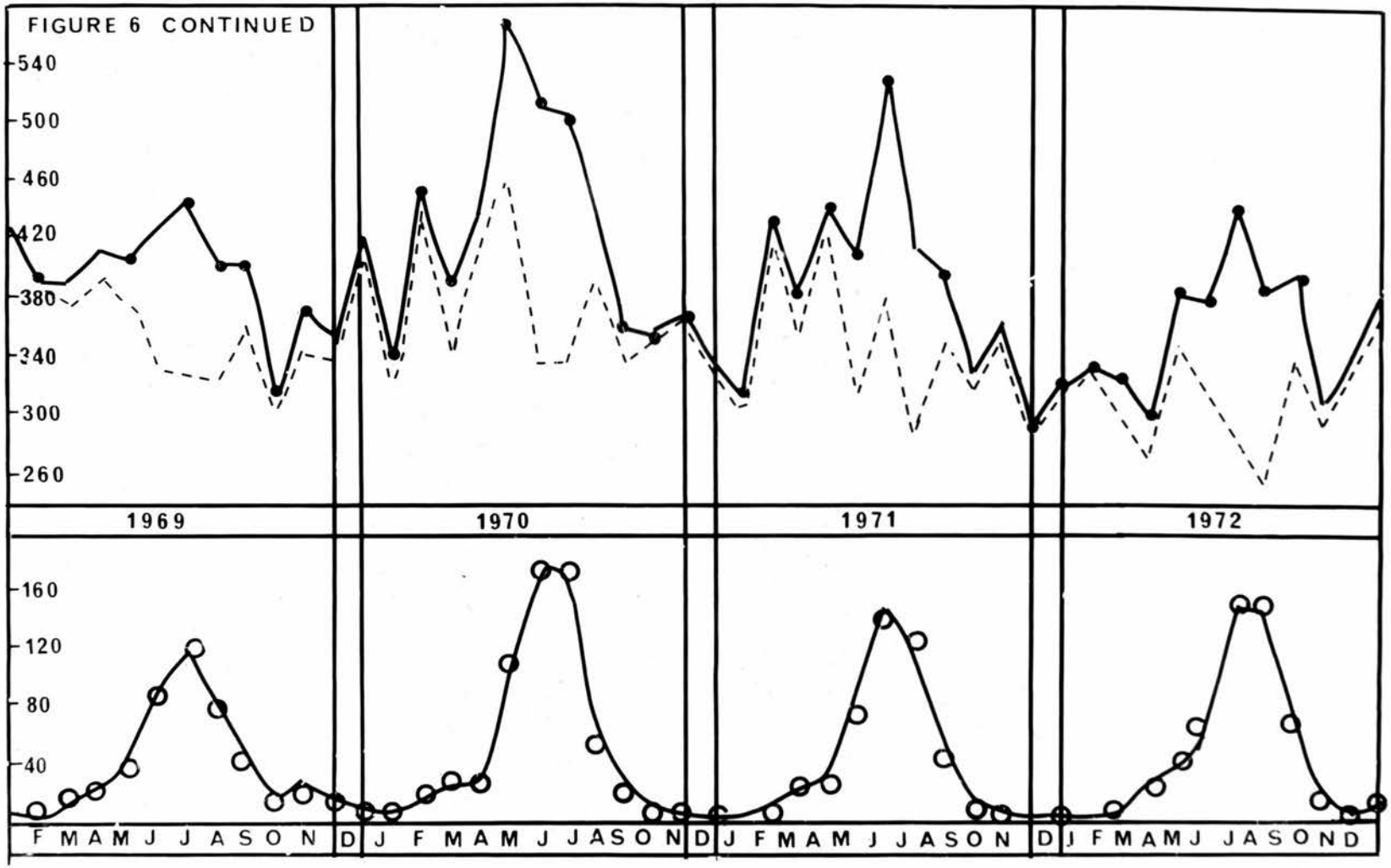


FIGURE 6 CONTINUED
540
500
460
420
380
340
300
260
1969
1970
1971
1972
160
120
80
40
F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D

times and June once; and the least busy months include August only twice and January, February, March and November once each and October twice.

There is, however, no doubt that in this practice there is a marked increase in work in the summer months, mainly in July and August, and that this work is caused by the care of visitors to the island, the percentage size of this increase is given in Table 8.

Table 8 Percentage of Direct Consultations due to Visitors.

Period of Year	Year	No. of Direct Consultations		Visitors as %
		Visitors	All Patients	
ALL YEAR	1965	381	3933	9.7
	1966	456	4459	10.2
	1967	497	4736	10.5
	1968	609	5017	12.1
	1969	457	4730	9.7
	1970	619	5143	12.0
	1971	475	4598	10.3
	1972	529	4279	12.4
June, July, August and September	1965	332	1467	22.6
	1966	394	1694	23.3
	1967	420	1839	22.8
	1968	531	2016	26.3
	1969	328	1672	19.6
	1970	512	2036	25.1
	1971	393	1723	22.8
	1972	407	1599	25.4
July and August	1965	241	813	29.6
	1966	313	965	32.4
	1967	290	1004	28.9
	1968	350	1112	31.5
	1969	193	847	22.8
	1970	347	1023	33.9
	1971	274	940	29.1
	1972	293	832	35.2

The figures in Table 8 show that taken over the whole year visitors cause 10% of the work load as measured in direct consultations. During

the summer months, June to September, this rises to 24% and in July and August reaches 30% on average.

The relative numbers of the two main types of consultation, surgery attendances and home visits, have been different in the visitors and the practice list patients continuously since 1965. In Figure 7 I show the monthly number of surgery attendances and home visits for each group of patients from 1965 to 1972, the actual numbers are set out in Appendices 2 and 3. The visits made to patients in the hospital are not included.

Those for the visitors, the lower of the two pairs of lines, show the peak of the number of home visits rising slightly in 1966 and then gradually falling to a low level in 1971 and 1972. The peak number of surgery attendances exceeds that of the home visits, except in 1966 and rises gradually, with a fall in 1969, to level off in 1970 to 1972. In most months from 1965 to 1971 and in all months in 1972 the attendances are more than the visits. The peaks in both types of consultation occur, of course, in the summer months of June to September.

The different pattern of the patients on the practice list is seen in the upper pair of lines. There is a considerable excess of home visits over surgery attendances from January 1965 to October 1968 but it is not until 1972 that the number of months in which the attendances exceed the visits is greater than those showing the opposite, and then only in a ratio of 7:5.

Frequency of Doctor Patient Contacts.

The frequency with which patients attend their doctor varies greatly throughout the country and in general it is higher in Scottish practices than in English and according to a comparison of 26 practices in the United Kingdom collected in "Present State and Future Needs of General

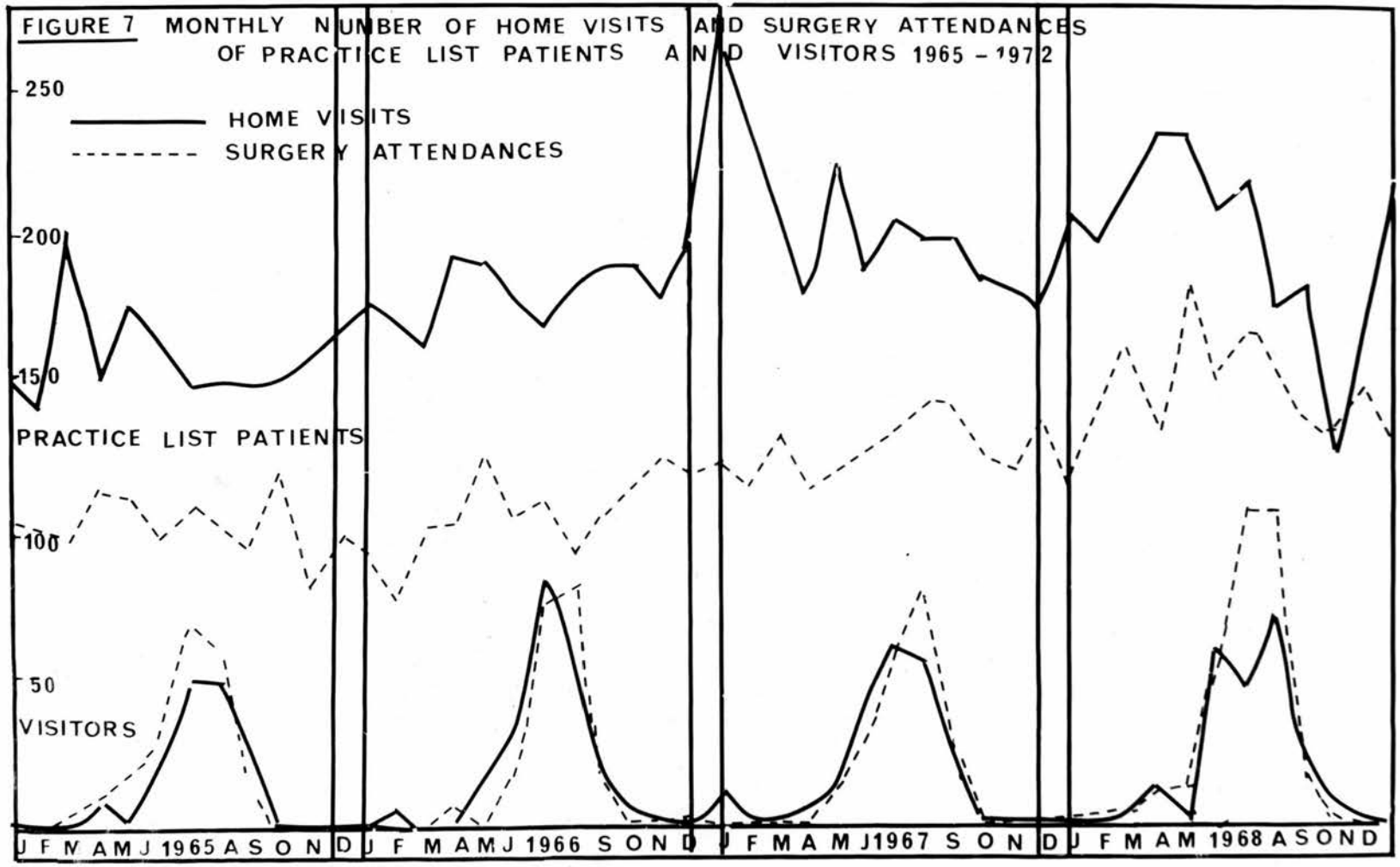


FIGURE 7 MONTHLY NUMBER OF HOME VISITS AND SURGERY ATTENDANCES OF PRACTICE LIST PATIENTS AND VISITORS 1965 – 1972
250
200
150
100
50
HOME VISITS
SURGERY ATTENDANCES
PRACTICE LIST PATIENTS
VISITORS
J F M A M J 1965 A S O N D
J F M A M J 1966 S O N D
J F M A M J 1967 S O N D
J F M A M 1968 A S O N D

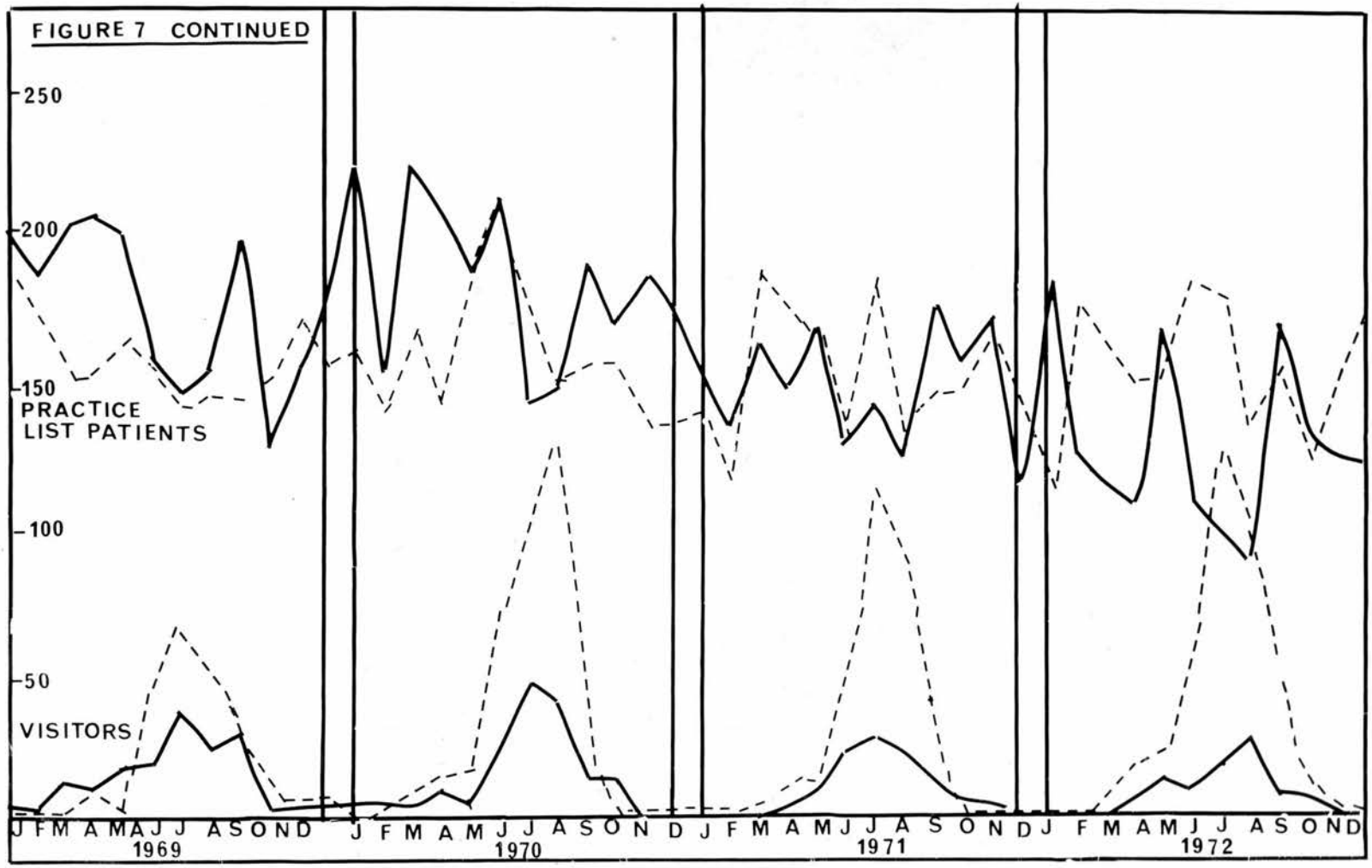


FIGURE 7 CONTINUED
250
200
150
PRACTICE
LIST PATIENTS
100
50
VISITORS
J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D
1969
1970
1971
1972

Practice". 3rd ed. (23) the frequency ranged from 2.7 to 7.2 per annum with my practice giving a figure of 6.3.

Table 9 gives the frequency of direct consultations for visitors per T.R. Claim Form signed and for the average number on the N.H.S. list for the practice patients. Two figures are given for each group, one for the total number of consultations and one excluding the visits to patients in hospital which is the more directly comparable with other practices.

Table 9 Frequency of Doctor/Patient Contacts.

Year	Visitors		Practice Patients	
	All Contacts	Excluding Hospital Visits	All Contacts	Excluding Hospital Visits
1965	1.54	1.45	5.36	4.72
1966	1.53	1.38	6.18	5.46
1967	1.42	1.30	6.42	6.06
1968	1.69	1.55	6.69	6.07
1969	1.70	1.44	6.28	5.95
1970	1.63	1.48	6.59	6.09
1971	1.41	1.33	5.99	5.50
1972	1.31	1.29	5.39	4.96
AVERAGE	1.53	1.40	6.11	5.68

Ratio of Surgery Attendances to Home Visits.

The pattern of the consultations varies considerably between the visitors and the practice patients as is shown by the ratio of surgery attendances to homevisits as given in Table 10.

Table 10. Ratio of Surgery Attendances to Home Visits.

Year	Visitors	Practice Patients
1965	1.26 : 1	0.64 : 1
1966	0.92 : 1	0.61 : 1
1967	1.00 : 1	0.63 : 1
1968	1.44 : 1	0.74 : 1
1969	1.43 : 1	0.90 : 1
1970	2.15 : 1	0.86 : 1
1971	2.69 : 1	1.04 : 1
1972	3.70 : 1	1.20 : 1

The trend as elsewhere (23) is for increasing attendance at the consulting rooms rather than for home visitation and the trend is most marked in the visitors, reflecting no doubt the pattern in their home practices and also the increasing number of visitors bringing cars to the island.

The lower ratios for the practice patients reflects the poor public transport facilities in the practice area, especially in the winter months, and the age distribution, with a larger number of elderly people without their own transport.

Hospital Visits.

The number of visits to attend to patients in the Hospital is very variable month to month and even year to year as is shown in Table 11.

Though in recording visits to patients in hospital one visit was recorded for each patient seen on a visit to the hospital, an exception

to this was made if a visit to the hospital was made specifically to attend to a particular patient on an occasion when I would not normally have been visiting the other patients for whom I was responsible; these occasions might be a second visit on the same day or a night visit and as far as the other patients were concerned I would do little more than say "hello" in passing. In these circumstances only the visits for medical reasons were recorded.

Table 11. Number of Visits to patients in hospital.

Year	1965	1966	1967	1968	1969	1970	1971	1972
Visitors	24	7	42	52	70	55	28	8
Practice List	425	465	238	240	226	338	450	300

The variation between the highest and lowest number per year is less than two-fold for the practice list patients but is ten-fold for the visitors and, although the numbers are small, it has to be remembered that these patients are in a general practitioner hospital which is situated 14 miles from my house and that, except in surgical cases, the practitioners are responsible for the care of the patients whom they admit. These visits can be very time consuming and the considerable swing in the number of them from year to year makes the forecasting of the practice work pattern impossible.

Hospital Referral & Other Arrangements for Visitor Patients.

Patients were admitted to the Isle of Arran War Memorial Hospital either under the care of the surgeon or under my own care. Even when they

were the responsibility of the surgeon I continued to see them clinically and to take a part in their care and treatment. Patients were also referred to the surgeon as out-patients for an opinion, radiology or treatment and I also saw patients as out-patients usually when doing my own radiography or dealing with minor injuries.

In cases where our hospital facilities were not enough for the proper care of the patient or when the patient's family were returning home he might be transferred to a mainland hospital. On one occasion a consultant physician from Glasgow paid a visit to a patient in the hospital, a visitor with a severe coronary thrombosis who was unfit to move to his home.

These and other referrals and items requiring special arrangements being made for the visitor patients are tabulated in Table 12 for the three years 1970-1972.

A number of patient's episodes of illness appear in more than one heading in Table 12 and some are in both the Arran and the Mainland sections.

Visitors with Pre-existing illness

As well as those patients who presented with a new complaint while staying on the island there were some who came to continue the treatment of an illness which had already been the subject of a consultation before their arrival.

Table 12. Number of Visitor Patients and Episodes in which Special Arrangements were made, 1970-1972.

Referral or Other Arrangement	Number	Percent of 1013 Visitors	Percent of 1314 Episodes
IN ARRAN			
Number of patients involved	84	8.3	
To Hospital as Out-Patient	34		2.6
my care	10		0.8
care of Surgeon	24		1.8
To Hospital as In-Patient	27		2.0
my care	11		0.8
care of Surgeon	16		1.2
Hospital visit by other consultant	1		0.1
Referred to District Nurse	22		1.7
Number of Deaths	5		0.4
TO MAINLAND			
Number of patients involved	67	6.6	
To Hospital as In-Patient	6		0.5
in home-town	2		0.2
in Glasgow	2		0.2
other	2		0.2
Letters to hospital doctors other than admission notes	3		0.2
Letters to patients' own doctor	50		3.8
To own home by ambulance service	8		0.6

Table 13. Visitors' Episodes which had pre-existed the patient's arrival in Arran.

Number of Patients	82	8.1% of patients
Number of Episodes	95	7.2% of episodes

These patients might require such services as the renewal of a prescription, the removal of stitches, ante-natal care or continuing courses of injections for macrocytic anaemia or hay fever.

Although 7.2% of episodes continued the treatment of the patient's own doctor it was in very few of these instances that there was a letter from the doctor. This can be a worry especially with requests for renewal of sleeping tablets or psychotropic drugs. Some patients did have, however, repeat prescription cards giving dates and quantities of previous supplies and these were most helpful.

CHAPTER SIX

MORBIDITY OF VISITORS 1970 - 1972.

The figures given so far refer to the work of the practice as measured by the number of direct consultations and are, except for those in the immediately preceding section on hospital referral etc., for the years 1965 to 1972. There now has to be considered the content of these consultations. The figures of the morbidity are for the years 1.1.1970 to 31.12.1972.

The list of the diagnoses with which the visitor presented is a long one. I have set out these diagnoses along with those for the practice patients in Table 14 as coded according to the RCGP Classification (19) at the time of consultation. A number of cases had to be classified under symptoms and other vague headings, so as to include these in the disease group in which they seemed to belong I classified them, if at all possible, within the appropriate group and not in Group 16 - Symptoms and Ill-defined Conditions.

There are eighteen disease groups in the Classification and both the visitors' and the practice patients' illnesses are to be found in each of these groups and the four groups with the greatest number of episodes are Respiratory Diseases, Accident and Violence, Digestive Diseases and Diseases of the Nervous System and Sense Organs in both visitors and practice patients. The greater number of episodes in this last group is in each instance in the number of diseases of the eye and ear.

In the Classification there are 401 separate diagnostic headings. The 1314 episodes in the visitors have been coded under 165 of these, the greatest number in any one diagnosis being Lacerations etc. with 161,

Table 14 Diagnoses of Episodes of Illness of Visitors and Practice Patients.

RCGP Code	Diagnostic Heading	Visitors	Practice Patients
	1. Communicable Diseases		
1	Tuberculosis of Respiratory System	1	
4	Gonococcal and other Venereal disease		1
9	Meningococcal infections.	1	
11	Measles	7	1
12	Rubella	3	4
13	Chicken Pox	3	12
14	Herpes zoster	1	10
15	Mumps	6	1
16	Infective Hepatitis	2	
20	Oxyuriasis	4	12
21	Dermatophytosis	6	38
22	Scabies		5
26	Other helminth infections		2
28	Other recognised disease not included above		4
30	Pyrexia with rash (all sites and ill-defined conditions)	3	
31	Pyrexia without rash (all sites and ill-defined conditions)		1
32	Other Symptoms, signs or incompletely diagnosed disease in this group		1
		37	93
	2. Neoplasms Malignant		
52	Stomach		1
53	Colon		2
54	Rectum		1
58	Breast	1	1
61	Prostate		1
62	Bladder and other urinary organs		1
68	All other malignant neoplasms	1	
	Benign		
70	Breast		1
72	Other female genito - urinary organs		2
73	Skin	2	8
74	All other benign neoplasms		3
82	All other symptoms, signs etc. in this group		1
		4	24

Table 14 (contd.)

RCGP Code	Diagnostic Heading	Visitors	Practice Patients
	3. Allergic, Endocrine System, Metabolic and Nutritional Diseases		
85	Hayfever	21	36
86	Asthma	19	5
87	Allergic Dermatoses	27	55
88	Thyroid hypertrophy and hyper-function		2
89	Myxoedema and cretinism	1	2
90	Other thyroid disorder		1
91	Diabetes	9	1
94	Other recognised disease not included above	1	3
101	Obesity	1	34
102	Glycosuria		1
105	Other Symptoms, signs etc. in this group		2
		79	143
	4. Diseases of Blood and Blood-forming Organs.		
110	Pernicious anaemia	5	1
111	Hypochromic anaemia	2	59
112	Other anaemias of specified type		1
113	Haemorrhagic conditions (except purpura)		1
		7	62
	5. Mental, Psychoneurotic and Personality Disorders.		
125	Schizophrenia	1	
127	Senile psychoses including senile dementia		3
128	Organic psychoses		1
129	Other psychoses		1
130	Anxiety states without mention of somatic symptoms	9	34
131	Hysterical states	2	4
132	Anxiety states, with phobic symptoms		2
133	Obsessive-compulsive state, obsessional disorders		1
134	Neorotic depressive state, reactive depression	6	30
135	Anxiety state, with associated somatic symptoms	5	26
137	Other psychoneuroses		1
138	Pathological personality		1
139	Addictions of all kinds	1	5
140	Amentia of all kinds	3	
145	Frigidity		1
146	Insomnia	10	16
148	Enuresis		3
150	Other symptoms signs etc. in this group		10
		37	139

Table 14 (Contd.)

RCGP Code	Diagnostic Heading	Visitors	Practice Patients
	6. Diseases of Nervous System and Sense Organs.		
155	Vascular lesions of C.N.S., acute onset	3	6
156	Multiple Sclerosis	1	
157	Paralysis Agitans	2	2
158	Epilepsy	4	
159	Migraine		10
166	Trigeminal neuralgia	1	2
167	Brachial neuritis	5	16
168	Sciatica	1	4
169	Other disease of Peripheral nerves and ganglia		9
	Diseases of Eye		
170	Conjunctivitis	19	84
171	Blepharitis	3	15
172	Hordeolum	4	4
173	Iritis		4
174	Other inflammatory disease of the eye		4
175	Disease of tear duct and lacrimal apparatus		4
176	Refractive errors		19
177	Corneal ulcers		4
178	Strabismus		1
179	Cataract		7
180	Glaucoma	3	3
181	Other diseases of the eye	2	12
	Diseases of the Ear		
182	Otitis externa	8	20
183	Otitis media, acute	40	60
184	Otitis media, chronic		1
186	Menieres Disease	1	3
187	Wax in the ear	14	55
189	Other forms of deafness	2	5
190	Other diseases of the ear and mastoid process		3
195	Coma and stupor		2
200	Vertigo	2	9
207	Other symptoms, signs etc. in this group		5
		115	373
	7. Diseases of Circulatory System.		
211	Coronary Thrombosis	2	8
212	Other arteriosclerotic heart disease		3
213	Myocardial degeneration from other cause		3
214	Functional disease of the heart	1	5
215	Congestive heart failure	11	10

Table 14 (Contd.)

RCGP Code	Diagnostic Heading	Visitors	Practice Patients
	7. Diseases of Circulatory System (contd.)		
216	Left ventricular disease		3
217	Other heart disease		1
218	Hypertension	10	29
221	Arteriosclerosis	1	5
222	Chilblains		6
223	Peripheral arterial disease	2	13
224	Varicose veins		10
225	Haemorrhoids	9	17
226	Phlebitis and thrombophlebitis	1	7
227	Other disease of circulatory system	2	3
230	Angina of effort	2	6
231	Precordial pain		2
233	Syncope	8	3
234	Oedema	1	12
235	Dysphoea		5
237	Other symptoms, signs etc. in this group	1	2
		51	153
	8. Diseases of Respiratory System.		
240	Non-febrile common cold	39	267
241	Febrile common cold and influenza-like illness	16	59
242	Febrile sore throat including tonsillitis	136	242
243	Sinusitis (acute)	17	39
244	Laryngitis and tracheitis		61
245	Influenza		27
246	Pneumonia and pheumonitis	1	3
247	Acute bronchitis	21	59
248	Chronic bronchitis	3	3
249	Hypertrophy of tonsils and adenoids		5
250	Chronic sinusitis	1	1
254	Bronchiectasis		1
256	Other disease process		12
261	Catarrh	5	51
262	Cyanosis	2	
263	Epistaxis		16
264	Haemoptysis		1
265	Dyspnoea		1
266	Stridor		1
267	Cough	26	127
271	Pleuritic pain	2	
272	Other symptoms, signs etc.		4
		282	984

Table 14 (Contd.)

RCGP Code	Diagnostic Heading	Visitors	Practice Patients
	9. Diseases of Digestive System.		
275	Diseases of teeth and supporting structures	18	47
276	Other diseases of buccal cavity and oesophagus	4	19
277	Ulcer of stomach		1
278	Ulcer of duodenum	1	3
279	Peptic ulcer unspecified	2	3
280	Disorders of gastric function	21	73
281	Other diseases of stomach and duodenum	1	1
282	Appendicitis	2	5
283	Femoral and inquinal hernia	1	7
284	Hernia of abdominal cavity (excluding inquinal and femoral)	1	3
285	Other diseases of intestines and peritoneum	2	5
286	Cholelithiasis		6
287	Cholecystitis without mention of gall-stones		4
288	Other diseases of liver gall bladder and pancreas		4
290	Constipation	2	12
292	Anorexia		1
293	Nausea		4
294	Heartburn		1
296	Haematemesis	1	4
299	Jaundice		1
301	Colic	5	10
302	Malaena	2	2
303) 304)	Acute vomiting and diarrhoea (febrile and afebrile)	139	147
306	Other non colicky pain	10	15
307	Wind		1
308	Other symptoms, signs etc. in this group		3
		212	382
	10. Diseases of Genito-Urinary System		
311	Pyelitis	1	6
313	Cystitis (acute)	21	84
314	Cystitis (chronic)		1
315	Urethritis (non venereal)		1
316	Other acute infections of urinary tract	3	5
317	Other diseases of urinary tract		3
318	Hyperplasia of prostate gland	2	7
319	Hydrocele		3
320	Orchitis and epididymitis	2	4
321	Other diseases of the male genitalia	1	4
322	Disease of breast other than neoplasm	2	6
324	Uterovaginal prolapse		4

Table 14 (Contd.)

RCGP Code	Diagnostic Heading	Visitors	Practice Patients
	10. Diseases of Genito-Urinary System (Contd.)		
325	Dysmenorrhoea	1	3
326	Amenorrhoea	3	3
327	Irregular menstruation	2	25
328	Menorrhagia		5
329	Menopausal symptoms	1	9
330	Disorders of menarche		1
331	Other diseases of the female genitalia	2	8
335	Vaginal discharge other than venereal	2	23
338	Retention of urine		1
339	Incontinence of urine		3
340	Frequency of micturition		3
342	Dyspareunia		1
343	Haematuria	1	2
344	Other symptoms, signs etc. in this group	1	10
		44	225
	11. Deliveries and Complications of Pregnancy, Childbirth and Puerperium		
345	Infection of genito-urinary tract during pregnancy		1
346	Toxaemia		2
347	Haemorrhages of pregnancy	4	8
350	Abortion		3
351	Delivery without complications		7
352	Normal pregnancy	8	34
357	Delivery with prolonged labour		2
358	Delivery with laceration of perineum		14
361	Mastitis		1
362	Other disease processes not included above	1	3
366	Other symptoms, signs etc. in this group	1	1
		14	76
	12. Diseases of Skin and Cellular Tissue.		
370	Boil and carbuncle	6	14
371	Cellulitis of finger and toe	15	13
372	Other cellulitis and abscess without lymphangitis	9	22
373	Other cellulitis and abscess with lymphangitis	2	2
374	Acute lymphadenitis	1	3
375	Impetigo	4	4
376	Infectious warts	9	14
377	Other local infections of skin and subcutaneous tissue	7	25

Table 14 (Contd.)

RCGP Code	Diagnostic Heading	Visitors	Practice Patients
	12. Diseases of Skin and Cellular Tissue (Contd)		
378	Seborrhoeic dermatitis	2	21
379	Eczema	9	32
380	Occupational dermatitis	4	13
381	Other dermatitis	7	20
382	Psoriasis and similar disorders	1	2
383	Pruritus and related conditions	5	10
384	Corns and callosities	2	6
385	Other hypertrophic and atrophic conditions of the skin		10
386	Other dermatoses		3
387	Disease of nail	1	6
388	Diseases of hair and hair follicle	1	2
389	Diseases of sweat and sebaceous glands	2	2
390	Chronic ulcer of skin	2	3
391	Other disease process not included above		1
395	Erythematous conditions		1
396	Pruritis		2
398	Other symptoms, signs etc. in this group	1	
		89	231
	13. Diseases of Bones and Organs of Movement		
405	Rheumatoid arthritis		1
406	Osteoarthrosis	15	34
407	Lumbago not attributed to disc lesion	1	2
408	Fibrositis and other muscular rheumatism	5	34
409	Other forms of arthritis and rheumatism	5	6
410	Torn meniscus of knee	1	1
411	Other form of internal derangement of knee	1	8
412	Displacement of intervertebral disc	5	6
413	Flatfoot		10
415	Other disease process not included above	4	10
420	Bursitis		7
421	Tenosynovitis	1	11
422	Synovitis	1	2
423	Back pain with sciatica	3	9
424	Back pain with other neuritis		2
425	Back pain alone	5	63
426	Frozen shoulder		9
427	Other symptoms, signs etc. in this group	1	15
		48	230

Table 14 (Contd.)

RCGP Code	Diagnostic Heading	Visitors	Practice Patients
	14. Congenital Malformation.		
433	Congenital malformation of circulatory system		1
436	Congenital malformation of genito-urinary system		2
437	Congenital malformation of bone and joint	1	
438	Other specified congenital malformations not included above	2	
		3	3
	15. Certain diseases of Early Infancy.		
440	Intracranial and spinal injury at birth	1	
441	Postnatal asphyxia and atelectasis		2
443	Diarrhoea of new born		1
451	Other symptoms, signs etc. in this group		2
		1	5
	16. Symptoms and Ill defined conditions.		
457	Loss of weight	1	1
458	Pyrexia of unknown origin	1	1
464	Other symptoms, signs and ill defined conditions not elsewhere considered		4
		2	6
	17. Accidents, Poisoning and Violence.		
470	Fracture of Skull	1	1
471	Fracture of Ribs	1	
472	Fracture of Pelvis		1
473	Fracture of Clavicle		1
474	Fracture of Humerus	1	4
475	Colles fracture		5
476	Fracture of carpal, metacarpal, tarsal and metatarsal bones		1
477	Fracture of phalanges	2	2
479	Dislocation of shoulder		1
480	Sprains and strains	41	103
481	Head injury (excluding fracture of skull)	8	19
483	Lacerations, amputations, superficial injuries, contusions, abrasion and crushing	161	246
484	Burns, first degree	3	2
485	Burns, second degree	18	11
486	Burns, third degree	3	10

Table 14 (Contd.)

RCGP Code	Diagnostic Heading	Visitors	Practice Patients
	17. Accidents, Poisoning and Violence (Contd.)		
488	Effects of alcohol poisoning		2
490	Effects of barbiturate poisoning	1	1
491	Effects of aspirin poisoning		3
492	Motion sickness	1	1
493	Other known injury not included above	14	27
494	Other symptoms, signs etc. in this group	1	1
		256	442
	18. Prophylactic Procedures.		
500	Vaccination against smallpox	4	24
501)	Inoculation against specific disease		
502)	Inoculation against other infectious disease including poliomyelitis	27	142
503	Medical examination for administrative purpose	1	34
504	Health education and instruction		2
505	Other prophylactic procedures (excluding ante-natal examinations)	1	45
		33	247
	19. Administrative Procedures.		
510	Administrative procedures		22
	No diagnosis noted		29
	TOTAL NUMBER OF NEW EPISODES	1314	3869

followed by Acute Vomiting and Diarrhoea - 139 and Febrile Sore Throat etc. - 136.

The 3869 episodes in the practice patients are coded under 265 headings with the greatest number being in Non-febrile common cold - 267, followed by Lacerations etc. - 246, Febrile Sore Throats etc. - 242 and Acute Vomiting and Diarrhoea. - 147.

The number of episodes in most of the diagnostic headings is small and even the number in some of the Disease Groups is small, especially for the visitors, therefore, the morbidity of the visitors cannot be compared with that of the practice patients in great detail. When the morbidity rates are calculated they care calculated for disease groups and not for individual disease or injury.

Some Problems Illustrated

Some of the problems that arise are common to both the care of the visitors and the practice patients and are the normal problems of island practice.

Case 499. At 12.45 a.m. I was called by Mr. A. a frequent holidaymaker in Machrie, to say that his wife who was 30 weeks pregnant was having pains but had no bleeding or discharge, the pains were not severe but she had felt definite contractions. To save time I asked him to take her direct to the Isle of Arran War Memorial Hospital at Lamlash, while I, too, drove direct there. At 1.20 a.m. I confirmed uterine contractions in an otherwise normal pregnancy. She was sedated with amylobarbitone sodium and I telephoned the senior registrar on duty at the Queen Mother's Hospital in Glasgow, who suggested that if it were possible she should be transferred to a maternity unit with full facilities

for the care of premature babies. There was a gale blowing and the R.A.F, Control decided that helicopter evacuation of the patient was not possible. I then telephoned Dr. Wallace Barr, at home in Paisley, a holiday householder on, and a frequent visitor to the island and our visiting Obstetrician and Gynacologist as well as being on the staff of the Queen Mother's Hospital. He arranged to send an ambulance over on the first ferry in the morning, carrying some bottles of IV Ethanol. Mrs. A. was still having contractions but they were not strong and had become less frequent. I went home for a couple of hours sleep and returned to the hospital at 8 a.m. and put up a saline IV drip on Mrs. A whose condition was unchanged. One of our midwives travelled to Glasgow with the patient and changed the drip over from saline to ethanol on the ferry crossing. Subsequently, the premature labour was averted for a time. She was delivered at 33 weeks and the baby is now also a regular Arran visitor.

Case 214. Mr. N. aged 43. When on a routine visit to a patient in Pirnmill, I was asked to see this nephew of the family. He had vomited that morning and had had diarrhoea three days previously, the motions being very dark, which he attributed to eating prunes. He had a history of peptic ulcer. He was pale and had a fast pulse but abdominal examination was negative. I thought he probably had a bleeding peptic ulcer. I was called back in two hours as he now had had a black bowel motion, this was weakly positive for blood with haematest. I took blood for haemoglobin and blood group, which I sent care of the purser on the ferry next morning having arranged with the laboratory at Ayrshire Central Hospital to collect it for test and cross-match with three pints of blood. They 'phoned later to report a haemoglobin of 9.9g% and I arranged for the blood to be put on the evening boat. Mr. N was admitted to the hospital at 4 p.m. and at

7 p.m. I set up a saline drip which, after the arrival of the steamer, was changed to the matched blood. One hour later the patient developed a rigor, one of my colleagues from the other practice happened to be in the hospital at the time and stopped the blood transfusion gave iv chlorpheniramine and let me know. The reaction settled quickly. Next morning he was improved and another of the bottles of blood was started and he was given the other two pints. On the 12th he had a rising pulse rate and a strongly positive occult blood test and he also had a rising temperature. The haemoglobin was around 9.7g%. After discussion with our consultant surgeon, who had seen him on several occasions, it was decided to transfer him to Glasgow where he later had a successful partial gastrectomy before going home to Lancashire.

Both these were medical problems in which the difficulties were in part due to geography and would have been no different if the patients had been Arran residents.

In Case 422 the medical problem was straight forward but the patient's relatives produced organisation problems. A general practitioner on holiday in Lochranza telephoned me to say that he had just seen an elderly lady, Miss J., who had been on a bus trip round the island and who seemed to have had a cerebral vascular spasm while in the tearoom there. She had lost her speech and had had a transient left-sided weakness but was now recovering. I agreed with him that I would send the ambulance for the patient as she was obviously unable to continue in the bus, and that I would see her at the hospital to decide if she were then fit to return to the mainland as she was here on a day trip. In this way I travelled only the 14 miles to the hospital instead of 18 miles to Lochranza and then a further 18 miles to the hospital. While in

the ambulance she developed left sided hemiplegia and became very restless. On admission she was able to speak. Her age was 79, she had arrived from Canada the previous day, on the journey from her home in America she had felt unwell and had to be transferred from 'plane to 'plane by wheel chair in both Detroit and Toronto. She had had one night's rest at a friend's house in Ayrshire and, having a free day before she was due to travel to Aberdeen, decided to make the day trip to and around Arran by boat and bus because it looked so nice from her bedroom window. Over the next 18 hours her cerebral lesion spread, she lost her speech, became comatose and died on the 7th day.

On the third day of her illness a nephew and niece flew in from America to be with her. It was the height of the holiday season and accommodation was found for them with difficulty. On the next morning, after a long discussion with me on the prognosis for Miss J and in the knowledge that she was by then deeply unconscious, they decided to leave and visit relatives. During the next four days they kept in touch by telephone while they visited Aberdeen, the Borders and South East England, returning after Miss J. died. Finally, again after much discussion and a number of telephone calls, Matron and the local undertaker arranged for two specialists in embalming to come from Glasgow to prepare the body so that it might be accepted by the airline for return to America.

The case of another American patient illustrates the difficulty in dealing with psychiatric disturbance in a patient from an unknown social and cultural background.

Case 1012, I saw Mrs. C. at 3 a.m., her husband had been wakened at 2.30 a.m. by her very heavy breathing, she had seemed to be unconscious, the sheet was over her face and he could not rouse her by slapping. He told me they had arrived on the previous afternoon for a pony-trekking

holiday and had been travelling for 48 hours. They were both schoolteachers and she was aged 32. She had been well the previous evening and had written a long letter before going to bed shortly after midnight. When seen she had good colour, her eyes were alert and bright, a history was difficult to take because she would only nod or talk in whispers and that mainly a request to "get me home". She obviously could understand and communicate. TPR, BP, Respiratory system, eye and limb reflexes and optic discs were all normal, she had a blowing apical systolic murmur which her husband said had been investigated two years previously and they had been told it was of no significance. Her grip was normal but I had to insist that she tried to grip and she then developed a fine rolling tremor of the right forearm and her legs became stiff and her face became set with an apprehensive expression. I thought that she probably had a hysterical reaction with a fugue-like state possibly due to disorientation after prolonged travelling, there was a possibility that she did have a cardiac lesion and had an attack of cardiac asthma or a cerebral embolism to initiate her upset. I decided to admit her to hospital for observation and possible transfer later to a mainland medical unit if the diagnosis was still in doubt. At 5 a.m. the night nurse 'phoned to let me know that Mrs. C was refusing to stay as soon as she had been put to bed. At 5.30 I found her looking much better, she was alert and talking normally and clearly and, in fact, garrulously. The gist of a long and bizarre tale was that she was emotionally involved with another man, that her husband did not know, that this man was important, "next to the Governor", a College principal and very strong-willed. She felt influenced by his will and that he wanted her to die on this trip. He called her his "blithe spirit" and "fey" which she took to mean doomed. She had wanted to die at 3 a.m. and not in the waters off Shetland which was the next stop

on their Scottish tour. The letter she had written was to her brother to tell him what she wanted done after she was dead. I put all this to her husband, except about the other man. He told me that she had been terrified by the transatlantic flight though she normally was unaffected by flying, that she had bought a bible before coming away and had insisted in holding it in the morning on the way to hospital, he was surprised to hear the name of the doctor that she had given me, as this was a physician whose name was often in the gossip columns as a member of the President's social circle and the C's. knew of him only through the press. I allowed her to go back to the boarding house, in fact, I took them back myself, with a supply of promazine 25mg. I began to wonder if she had paranoic schizophrenia. I had another long interview with her the next day during which she hardly stopped talking in more than an hour on (i) the power of love, (ii) her family history which developed through a series of dark hints of a racial skeleton in the cupboard into (iii) a statement that she had Negro blood and was in terror of this being found out by her friends and that, in fact, an internationally known black politician, whom she named, was her uncle (she was very fair haired and had light eyes) and finally (iv) gave a long account of a plan to reform the UN through the power of love and revitalised youth organisations. I arranged with the owner of the house for Mr. C. to call on me without his wife. I told him that I thought his wife was at least hysterical and possibly more seriously ill and that she required psychiatric assessment preferably from someone with a knowledge of their social background. He said that she was apt to have fantasies with herself at the centre of the stage but that he had not noticed her to have bizarre thoughts or abnormal reasoning. He confirmed the possibility of Negro blood in the family but became very tight lipped and monosyllabic so I

neither repeated the name she had given nor pursued the matter further. He was astounded at her showing any interest in the reform of the U.N. He stated that he intended that they should continue the holiday as planned unless any further symptoms appeared.

Two days later Mrs. C 'phoned to say that she had written a "nutty letter" to her brother and that she had written to the doctor whom she had previously mentioned asking him to get in touch with her brother. I suggested that she cable to her brother and that she should go home soon and rapidly seek advice on her emotional problems. Next day they left to continue on their Scottish tour. I sent my notes to the family doctor whose name Mr. C had given me with a request to be informed of the outcome of this puzzle but I heard no more from either patient or doctor. Having no cultural baseline I was unable even after more than 3½ hours of talk with both patient and her husband to decide what was fact, what fantasy and what, if anything, genuine evidence of serious mental illness.

People who are ill away from their own home are, of course, more emotionally upset than they might be at home. Some indeed, lying in bed at considerable expense in a hotel and unable to eat or go out and join in the rest of the family's activities, sometimes express their frustration by seeming to blame the doctor for their illness. It is difficult to decide at times if the emotional upsets are the cause or the effect of the illness.

Case 1352. On my routine day for visiting the north end of the practice, I was asked to call on Mrs. E. She was aged 81 and was complaining of palpitations but only when she sat up. She said she had been worried since she came to the island about what would happen should she take ill. Her pulse rate was 80 and regular, heart sounds were normal

and there were no signs of heart failure. The pulse rate was unchanged on sitting up. She was treated with reassurance and a small dose of phenobarbitone. On the next afternoon I was recalled to see her and found that she had now developed breathlessness and had been so all day, especially on movement. The pulse rate was 90 and regular and she had basal crepitations and sacral oedema. I gave her frusemide and admitted her to the hospital and on seeing her again in the evening I found her to be improved she was given more frusemide and digitalisation was started. During the night she passed a large amount of urine and the next day there was neither sacral oedema nor basal crepitations. On the third day she was sick and the digitalis was discontinued. Arrangements were made for her to travel home by ambulance to Glasgow on the fourth day as the family were then at the end of their holiday and she was much improved.

A problem that arises from time to time is that of the person requiring a repeat of drugs that they are taking regularly. Now that containers have the drug name on them the identification of the drug is easier, however, this does not help if it is a preparation which I do not use myself. If often takes several days to get an order from wholesale suppliers in Glasgow. A recent development has been the arrival at the door of patients on a Monday, even on a Saturday night or Sunday, to say that they require a repeat prescription which they should have gone for before they left home but their own doctor had an appointment system and they had not troubled to make an appointment. It is most difficult when the patient requires hypnotic or psychotropic drugs if they have not a letter or repeat prescription form with them. The reason why the prescription or the drugs is required is often accompanied by such detailed circumstantial evidence that the doctor does not know whether he is dealing with a good

story or a good story-teller, as my notes on Mrs. D. illustrate.

Case 546. Mrs. D, aged 35, 20/7. "Has lost chlordiazepoxide - accident - very detailed - protesting too much - vague about when seen by own doctor. Script for 50. ? psychopath". 31/7. "Chlordiazepoxide 10 mg. (60). Taking at least 5 daily. Can't sleep etc., etc., Warned re dosage. Letter to own Dr."

Some patients reappear each year with the same illnesses, such as macrocytic anaemia requiring injections as has already been noted or as Case 189, Mr. N., who had had five separate periods of temporary residence in the years 1968 to 1972. He suffered from chronic bronchitis and increasing disability from emphysema. In the early years all he came to me for was a National Health Insurance Certificate but latterly he required treatment on each visit to the Island. He died in the course of a short illness quite suddenly just after the end of this survey.

The reasons for some patients returning yearly are sometimes trivial and can be amusing, such a one is Mr. W. Case 746, who came to see me first at my Lochranza consulting room. He had ankle swelling due to osteo-arthritis following an old ankle injury and required a renewal of the elastic stocking that he wore. He told me that he had recently had a great deal of trouble to get a stocking strong enough to stand up to the wear that he gave it. He lived on the outskirts of Edinburgh and I gave him the name of a firm whose owners I had known when I was in practice in Fife and told him to take his problem to them with my kind regards. He has since returned once each year to get a prescription for stockings partly because he got what he wanted and partly because he cannot be bothered to make an appointment at his own doctor's group practice premises.

Deaths of visitors present a number of problems, not only with the

difficulty of diagnosis and consequent difficulty in certification, but also there is the increased distress of relatives often suddenly alone and in a strange place far from the rest of their family and without even the support of neighbours or of a doctor or nurse known to them. The need on occasion for the police to investigate so that a report can be made to the Procurator-Fiscal, or to remove a body to the police mortuary (holiday hotels do not like to keep bodies in their bedrooms for anything but the minimum time) adds to their distress.

Case 762. In the late evening a breathless and very distressed Mrs. M. 'phoned from a house about 70 yards from the cottage in which she was staying with her husband to tell me that he had "glandular cancer" that he had been well all day and that he had suddenly become unconscious and was gurgling in his throat. When I saw him some six minutes later he looked moribund, his wife said he was 49, had complained of headache and difficulty in swallowing earlier in the evening and the change in his condition had been very sudden. He obviously had fluid in his lungs, he had no enlarged cervical glands but whether he had pulmonary oedema or haemorrhage or inhaled vomit I was unable to decide. His wife did not know the actual type of tumour from which he suffered. While I spoke to her I put in an airway, gave him some intravenous aminophylline and started artificial respiration by chest compression. She then told me that she had been given no hope of a cure and so, with the possibilities being either a major lung complication or a bleed in a cerebral secondary, we mutually decided that I should not continue resucitation and Mr. M died in about 5 or 6 minutes. She had told me that a neighbour in Glasgow was a haemotologist in one of the teaching hospitals and, as well as being a personal friend, had been involved in the treatment of her husband.

I telephoned him and was told that the diagnosis had been a malignant melanoma probably with cerebral metasteses. The house to which Mrs. M. had gone to phone is owned by an elderly spinster and she kindly took Mrs. M. in, let her 'phone her relatives and, although she refused the offer of a bed, had sat with her for several hours till first light. I arranged for one of my colleagues to give the second cremation certificate and transport of the body was arranged to their home the next afternoon.

These few case histories give some of the clinical and organisational problems that can confront the doctor dealing with strangers in a somewhat isolated community.

Patients with more than one episode of illness.

In 1970-1972, 1013 visitors consulted with 1314 episodes of illness and 725 practice patients with 3869 episodes.

It is to be expected that the resident local population will over three years produce a number of illnesses per head of population, just over five each in this survey though there were the normal changes in the number of people at risk throughout the three years and the average list size was around 690 (see Table 4).

In the visitors the reasons for there being 1.3 episodes per person are several. A visitor can have more than one period of illness in one visit to the island, can have visited the island on more than one occasion in the three years and can have had more than one episode of illness recorded at one consultation. This last cause is also one that affects the numbers for the practice patients.

At a consultation there may be considered at the one interview more than one condition. This may be because a pre-existing chronic

condition has a bearing on the diagnosis and treatment of the new diagnosis, because something considered trivial by the patient has been kept till the next time he comes to consult, so that two new complaints may be made at the same time or because, and this is particularly true of the elderly, several different pathologies may co-exist each requiring treatment.

In the practice patients, especially those with chronic disabilities such as diabetes, hypertension or osteoarthrosis, other episodes of illness can be superimposed and it can be difficult rigidly to define separate periods of illness for separate diagnoses and nearly impossible when the new episode is related to the pre-existing disease, such as heart failure developing in a hypertensive patient.

In the visitor patients the limited stay on the island affects the length of the period of illness and the recording of diagnoses in two ways. A pre-existing illness, such as the three mentioned above, may be relevant to the diagnosis or treatment of the condition that necessitated the consultation, for instance in gastro-enteritis occurring in a diabetic or a joint injury in a person with osteoarthrosis. When this occurred in the survey of visitors both diagnoses were recorded as new episodes as they were new episodes as far as my practice was concerned.

A visitor might also consult primarily with a throat infection or an injury and then request treatment for gastro-enteritis or might have two related acute conditions such as concussion and a fractured humerus.

In Tables 15 A. and B. are set out the number of visitors who had two or three new episodes in one period of illness. There were none who had more than three.

In Tables 16 A. and B. are the numbers of consultations of practice

patients at which more than one new episode were recorded. Again there were none with more than three.

These two sets of figures are not directly comparable because of the greater tendency of visitors' pre-existing illness to be recorded as new diagnoses.

Table 15 A. Number of Visitors with Two New Episodes at one consultation.

Age	0-14		15-44		45-64		65+		N/K		Total		
Sex	M	F	M	F	M	F	M	F	M	F	M	F	ALL
Summer	9	15	17	27	5	10	3	10	-	-	34	62	96
Rest/Year	1	-	6	1	2	3	3	4	-	2	12	10	22
Total	10	15	23	28	7	13	6	14	-	2	46	72	118

Table 15 B. Number of Visitors with Three New Episodes at one consultation.

Age	0-14		15-44		45-64		65+		N/K		Total		
Sex	M	F	M	F	M	F	M	F	M	F	M	F	ALL
Summer	1	-	-	-	1	-	-	1	1	-	3	1	4
Rest/Year	-	-	1	-	-	-	-	1	-	-	1	1	2
Total	1	-	1	-	1	-	-	2	1	-	4	2	6

Table 16 A. Number of Consultations in Practice Patients with Two New Episodes.

Age	0-14		15-44		45-64		65+		N/K		Total		
Sex	M	F	M	F	M	F	M	F	M	F	M	F	ALL
Summer	7	5	16	12	6	9	7	8	-	1	36	35	71
Rest/Year	14	8	14	26	7	16	7	14	1	-	43	64	107
Total	21	13	30	38	13	25	14	22	1	1	79	99	178

Table 16 B. Number of Consultations in Practice Patients with Three New Episodes.

Age	0-14		15-44		45-64		65+		N/K		Total		
Sex	M	F	M	F	M	F	M	F	M	F	M	F	ALL
Summer	1	-	-	-	-	1	-	-	-	-	1	1	2
Rest/Year	-	-	-	-	-	-	1	-	-	-	1	-	1
Total	1	-	-	-	-	1	1	-	-	-	2	1	3

A visitor can have more than one period of illness in one or more visits to the island. The number of visitors with more than one period of illness was 127 (12.5%) and of these 51 (40.1%) had more than one period of illness in one year and only 27 (21.2%) had more than two. These figures are detailed in Tables 17 and 18.

Table 17. Number of Visitors with more than One Period of Illness 1970-1972.

Number of illnesses	2	3	4	5	6	Total
Males	39	9	2	1	1	52
Females	61	11	3	-	-	75
Total	100	20	5	1	1	127
Percent	78.8	15.7	3.9	0.8	0.8	100.

Table 18. Number of Visitors with more than One Period of Illness in 1970-72 by number of years in which they consulted.

Number of Years	1	2	3	Total
Males	19	27	6	52
Females	32	39	10	75
Total	51	66	16	127
Percent	40.1	52.0	7.9	100.

A period of illness can involve more than one diagnosis and if so will be recorded as more than one episode of illness.

Sixty per cent of the 127 visitors who had more than one period of illness were visitors who returned to the practice area in two or three years and some of these were only visitors because they were the registered patients of doctors elsewhere but were local people returning for holiday from school, university or work elsewhere.

CHAPTER SEVEN

COMPARISON OF MORBIDITY IN VISITORS AND PRACTICE PATIENTS.

The number of consultations by the visitors is much greater in the summer months of June to September than in the rest of the year and those by the practice list patients are spread throughout the year (see Figure 6).

In the years 1970-1972 there were 1314 episodes of illness in the visitors and 3869 in the practice patients, the distribution of these episodes in the year is set out in Table 19.

Table 19. Number of episodes of Illness in Summer and Rest of Year.

	Visitors				Practice Patients			
	Male	Female	Total		Male	Female	Total	
			No.	%			No.	%
Summer	467	596	1063	80.9	525	690	1215	31.4
Rest/Year	125	126	251	19.1	1111	1543	2654	68.6
Total	592	722	1314	100.0	1636	2233	3869	100.0

Eighty-one percent of the visitors' illnesses occurred in the summer months but only 31% of the practice patients' episodes. In the four summer months there was a total of 2278 episodes and of these 1063 (47%) were in visitors and 1215 (53%) in the local population, but during the rest of the year 251 (9%) were visitors' and 2654 (91%) were locals'.

To obtain a reasonable comparison of morbidity in the two groups I decided to compare the summer figures only as these figures contain by far the greater morbidity of visitors and also because the number of episodes is roughly the same in both groups.

The number of episodes in a great number of the diagnostic headings in Table 14 is very small, and in some of the diagnostic groups of the classification there are only a few episodes recorded. In Table 20 A - D the number of episodes in each main diagnostic heading are given for the age sub-groups 0-14, 15-44, 45-64, over 65 years and age not known. Table 20 A. gives Males - Summer, 20 B. Females - Summer, 20 C. Males - Rest of year and 20 D gives Females - Rest of year. Only the figures in 20 A. and 20 B. are used in the comparison of morbidity and those in 20 C. and 20 D. are included to complete the picture of the morbidity around the year and to illustrate, once again, the considerable difference between summer and winter morbidity of visitors.

In several of the disease groups the number of new episodes is very small and when the morbidity rates are calculated the rates for these groups are not included but they have been included in the estimation of the population at risk.

The episodes for the summer months in each disease group expressed as a percentage of all the episodes for each group of patients are set out in Table 21.

The greatest proportion of new episodes for visitor and practice patients of each sex is for respiratory diseases. For both the male visitors and the male practice patients the second largest group is accidents and violence and for both the female groups it is disease of the digestive system. The third disease group for visitor and practice male patients is digestive diseases, for female visitors it is accidents etc. and for female practice patients prophylactic procedures. Fourth largest for male visitors is the group of diseases of the nervous system and this group is also fourth for the female visitors with diseases of

Table 20 A. Episodes of illness by RCGP Classification and Age-sex groups.
Males Summer 1970/1972.

RCGP Classification	Males Summer											
	Visitors						Practice Patients					
	Age 0/14	15/44	45/64	65+	N/K	Total	0/14	15/44	45/64	65+	N/K	Total
1. Communicable	8	1	3	-	-	12	6	3	1	-	-	10
2. Neoplasms	-	1	-	-	-	1	-	-	1	2	-	3
3. Allergic, Endocrine	14	9	5	1	1	30	11	8	1	2	-	22
4. Blood & Blood forming	-	-	1	-	-	1	-	2	-	2	-	4
5. Mental Psychoneurotic	2	6	1	1	-	10	5	7	-	2	1	15
6. NS & Sense Organs	23	11	12	1	3	50	11	9	11	17	1	49
7. Circulatory	-	4	8	1	1	14	-	4	2	12	-	18
8. Respiratory	50	37	18	7	3	115	63	36	6	18	1	124
9. Digestive	35	27	9	2	1	74	23	10	7	14	-	54
10. Genito Urinary	2	3	3	-	-	8	2	2	-	7	-	11
11. Pregnancy	-	-	-	-	-	-	-	-	-	-	-	-
12. Skin & Cellular Tissue	8	9	3	1	3	24	10	12	6	13	-	41
13. Bones & Organs of Mov.	2	5	3	4	1	15	-	9	10	10	-	29
14. Congenital Malform	1	2	-	-	-	3	-	-	-	-	-	-
15. Early Infancy	-	-	-	-	-	-	1	-	-	-	-	1
16. Ill-defined	-	2	-	-	-	2	-	1	-	-	-	1
17. Accidents etc.	36	39	14	5	2	96	21	44	10	13	-	88
18. Prophylactic	5	4	3	-	-	12	22	21	2	8	-	53
19. Administrative Proc.	-	-	-	-	-	-	-	-	-	-	-	-
Not noted.	-	-	-	-	-	-	-	2	-	-	-	2
Totals	186	160	83	23	15	467	175	170	57	120	3	525

Table 20 B. Episodes of Illness by RCGP Classification and Age Sex Groups. Females Summer 1970-1972.

RCGP Classification	Females Summer											
	Visitors						Practice Patients					
	Age 0/14	15/44	45/64	65+	N/K	Total	0/14	15/44	45/64	65+	N/K	Total
1. Communicable	11	9	-	1	-	21	5	2	5	1	-	13
2. Neoplasms	1	-	-	-	-	1	-	-	-	2	-	2
3. Allergic & Endocrine	8	14	9	9	1	41	4	19	5	6	-	34
4. Blood & Blood forming	-	2	-	3	-	5	1	7	3	3	-	14
5. Mental & Psychoneurotic	-	11	3	6	-	20	1	6	10	14	-	31
6. NS & Sense Organs	19	10	12	4	-	45	10	10	12	17	-	49
7. Circulatory	-	5	7	11	3	26	-	7	8	19	-	34
8. Respiratory	45	47	16	2	1	111	32	52	38	23	1	146
9. Digestive	39	43	16	8	-	106	21	33	15	22	-	91
10. Genito-Urinary	2	20	7	1	-	30	1	30	8	14	-	53
11. Pregnancy	-	11	-	-	-	11	-	20	-	-	-	20
12. Skin & Cellular Tissue	13	21	7	3	1	45	9	13	5	10	1	38
13. Bones & Organs of Mov.	-	5	5	5	1	16	-	5	8	13	-	26
14. Congenital Malform.	-	-	-	-	-	-	1	-	-	-	-	1
15. Early infancy	1	-	-	-	-	1	-	-	-	-	-	-
16. Ill Defined	-	-	-	-	-	-	-	-	-	1	-	1
17. Accident Violence	20	46	21	14	3	104	18	23	21	18	1	81
18. Prophylactic	4	7	-	-	2	13	14	20	8	6	1	49
19. Administrative	-	-	-	-	-	-	-	-	-	-	-	-
Not noted.	-	-	-	-	-	-	2	2	2	1	-	7
Totals	163	251	103	67	12	596	119	249	148	170	4	690

Table 20 C. Episodes of illness by RCGP Classification and Age-Sex Groups.
Males - Rest of Year 1970 - 1972.

RCGP Classification	Males - Rest of Year											
	Visitors						Practice Patients					
	Age 0/14	15/44	45/64	65+	N/K	Total	0/14	15/44	45/64	65+	N/K	Total
1. Communicable	-	1	-	-	-	1	21	7	6	4	-	38
2. Neoplasms	-	-	1	-	-	1	-	-	3	4	1	8
3. Allergic & Endocrine	-	2	1	1	1	5	9	16	4	6	-	35
4. Blood & Blood Forming	-	1	-	-	-	1	-	1	-	1	-	2
5. Mental and Psychoneurotic	-	-	-	1	1	2	7	7	6	11	-	31
6. NS & Sense Organs	4	3	1	-	1	9	38	34	15	37	-	124
7. Circulatory	-	1	1	3	2	7	-	5	4	32	-	41
8. Respiratory	6	9	1	5	4	25	151	71	39	63	2	326
9. Digestive	7	3	2	1	1	14	26	35	12	25	-	98
10. Genito Urinary	1	-	1	-	-	2	6	5	2	19	-	32
11. Pregnancy	-	-	-	-	-	-	-	-	-	-	-	-
12. Skin & Cellular Tissue	3	4	-	1	-	8	26	28	11	12	-	77
13. Bones & Organs of Mov.	-	4	-	3	1	8	3	22	22	21	-	68
14. Congenital Malform	-	-	-	-	-	-	1	-	-	1	-	2
15. Early Infancy	-	-	-	-	-	-	2	-	-	-	-	2
16. Ill defined	-	-	-	-	-	-	-	-	1	-	-	1
17. Accident & Violence	2	21	5	2	6	36	38	74	12	20	1	145
18. Prophylactic	1	2	1	1	1	6	33	20	5	4	1	63
19. Administrative Proc.	-	-	-	-	-	-	3	5	2	-	-	10
20. Not noted	-	-	-	-	-	-	4	3	1	-	-	8
Totals	24	51	14	18	18	125	368	333	145	260	5	1111

Table 20 D. Episodes of illness by RCGP Classification and Age-Sex Groups. Females - Rest of Year 1970/72.

RCGP Classification	Females - Rest of Year											
	Visitors						Practice Patients					
	Age 0/14	15/44	45/64	65+	N/K	Total	0/14	15/44	45/64	65+	N/K	Total
1. Communicable	1	2	-	-	-	3	15	9	7	1	-	32
2. Neoplasms	-	-	-	1	-	1	-	2	6	3	-	11
3. Allergic & Endocrine	2	1	-	-	-	3	6	25	15	6	-	52
4. Blood & Blood Forming	-	-	-	-	-	-	4	21	13	4	-	42
5. Mental & Psychoneurotic	-	2	1	1	1	5	5	18	21	18	-	62
6. NS & Sense Organs	3	2	2	4	-	11	45	30	38	38	-	15
7. Circulatory	-	1	2	1	-	4	1	11	26	22	-	60
8. Respiratory	8	11	5	3	4	31	109	111	81	87	-	388
9. Digestive	2	10	1	5	-	18	32	36	32	38	1	139
10. Genito Urinary	-	1	-	3	-	4	4	72	29	24	-	129
11. Pregnancy	-	3	-	-	-	3	-	56	-	-	-	56
12. Skin & Cellular Tissue	1	4	-	6	1	12	21	25	11	18	-	75
13. Bones & Organs of Mov.	-	2	2	5	-	9	5	33	31	38	-	107
14. Congenital Malform.	-	-	-	-	-	-	-	-	-	-	-	-
15. Early Infancy	-	-	-	-	-	-	2	-	-	-	-	2
16. Ill defined	-	-	-	-	-	-	-	-	2	1	-	3
17. Accident & Violence	5	7	2	5	1	20	18	45	3 3	32	-	128
18. Prophylactic	1	-	1	-	-	2	45	31	4	2	-	82
19. Administrative Proc.	-	-	-	-	-	-	7	5	-	-	-	12
Not noted.	-	-	-	-	-	-	3	6	2	1	-	12
Totals	23	46	16	34	7	126	322	536	351	333	1	1543

Table 21. Percentage of Episodes of Illness by R.C.G.P. Classification of Visitors and Practice Patients seen in Summer 1970 - 72.

Diagnostic Groups	Males		Females	
	Visitors	Practice Patients	Visitors	Practice Patients
Number of episodes	467	525	596	690
1. Communicable Disease	2.6	1.9	3.5	1.9
2. Neoplasms	0.2	0.6	0.2	0.3
3. Allergic, Endocrine etc.	6.4	4.2	6.8	4.9
4. Blood and Blood forming organs	0.2	0.8	0.8	2.0
5. Mental, Psychoneurotic etc.	2.2	2.8	3.3	4.5
6. N.S. and Sense Organs	10.7	9.3	7.6	7.1
7. Circulatory System	3.0	3.4	4.4	4.9
8. Respiratory System	24.6	23.6	18.6	21.3
9. Digestive System	15.8	10.3	17.8	13.2
10. Genito-Urinary System	1.7	2.1	5.0	7.7
11. Pregnancy etc.	-	-	1.8	2.9
12. Skin and Cellular Tissue	5.2	7.8	7.6	5.5
13. Bones and Organs of Movement	3.2	5.5	2.7	3.8
14. Congenital Malformations	0.6	-	-	0.1
15. Certain Diseases of Early Infancy	0.4	0.2	0.2	-
16. Ill-defined Symptoms etc.	-	0.2	-	0.1
17. Accident & Violence	20.6	16.8	17.5	11.7
18. Prophylactic procedures	2.6	10.1	2.2	7.1
19. Administrative procedures				
Diagnosis not noted	-	0.4	-	1.0
	100.0	100.0	100.0	100.0

the skin having an equal percentage of episodes, for the practice patients males have prophylactic procedures and females have genito-urinary diseases. Allergic etc. diseases are fifth in order for the male visitors, diseases of the nervous system and sense organs for the male practice patients, for the female visitors allergic etc. diseases and for the female practice patients there are equal percentages of diseases of the nervous system etc. and prophylactic procedures.

In order to calculate the rates of morbidity of the visitors it is necessary to know the population at risk and, as has been shown, the number of visitors in the practice area in any one time is not known. However, if the assumption is made that the visitors and the local population have a roughly similar pattern of new episode morbidity and a similar threshold for seeking medical attention then an estimate of the equivalent visitor population at risk can be made. Details of this calculation are given in Appendix 4 and it is from these estimated population figures that the new episode rates are calculated for comparison with those of the practice patients.

The population at risk for the practice from the age/sex register and that estimated for the visitors are in Table 22.

Table 22. Visitor and Practice Populations at risk for the three years 1970 - 1972.

	Visitors			Practice Patients		
Age	Male	Female	All	Male	Female	All
0-14	234	249	483	226	186	412
15-44	279	296	575	327	305	632
45-64	264	164	428	206	269	475
65+	43	92	135	222	294	516
Total	820	801	1621	981	1054	2035

For the purposes of the statistical comparison of the morbidity rates the Summer data for both the visitors and the practice patients were converted into annual rates. In Table 23 these are expressed as rates per 1000 but the significance of the differences are calculated from the absolute values. Absolute values of "new episodes" and "no new episodes" according to the appropriate "population at risk" by age group and disease group and for each sex and both sexes for visitors and practice patients were obtained. Chi-squared values were then calculated for all items worthy of comparison and the level of significance assessed. The values of the differences and the levels of significance are included in the table along with the rates.

In a number of the age/sex/disease groups the chi-squared values were inflated and therefor suspect because at least one of the "expected" cell values was less than 5, in these items the value of difference was assessed by the t-statistic for significance of the difference in percentages. A comparison with the chi-squared tests on the same data reveals that this test errs on the side of caution.

Comparing the morbidity rates of visitors and practice patients irrespective of age and sex, the visitors have a greater rate of new episodes of Gastro-intestinal diseases ($P < 0.001$), of Accident, Violence etc. ($P < 0.01$), of Allergic etc. diseases ($P < 0.10$) and of Communicable Diseases at the 5% level of significance. The larger rates for the practice population are for Prophylactic procedures ($P < 0.001$), for Bone etc. diseases and for Blood diseases, both also at the 5% level.

Table 23. Morbidity rates per 1000 visitors and practice patients, summer 1970-72 compared by disease group, sex and age.

DISEASE GROUPS	SEX	AGE	MORBIDITY RATES		VALUE OF DIFFERENCE *	LEVEL OF SIGNIFICANCE **	VALUE OF P and LEVEL OF SIGNIFICANCE WHERE CHI-SQUARED INFLATED AND SUSPECT	
			VISITORS	PRACTICE PATIENTS				
1 COMMUNICABLE DISEASES	Male	Under 15	34.2	26.5	P > 0.20	NS		
		15 - 44	3.6	9.2	t = 0.89	NS	P > 0.20	NS
		45 - 64	11.3	4.9	t = 0.78	NS	P > 0.20	NS
		65 and over	-	-				
		ALL	14.6	10.2	P > 0.20	NS		
	Female	Under 15	44.2	26.9	P > 0.20	NS		
		15 - 44	30.4	6.6	P < 0.10	PS		
		45 - 64	-	18.6	t = 1.78	PS	P > 0.10	PNS
		65 and over	10.9	3.4	t = 0.90	NS	P > 0.20	NS
		ALL	26.2	12.3	P < 0.05	S		
	Both Sexes	Under 15	39.3	26.7	P > 0.20	NS		
		15 - 44	17.4	7.9	P > 0.20	NS		
		45 - 64	7.0	12.6	t = 0.89	NS	P > 0.20	NS
		65 and over	7.4	1.9	t = 0.99	NS	P > 0.20	NS
		ALL	20.4	11.3	P < 0.05	S		
3 ALLERGIC, ENDOCRINE SYSTEM METABOLIC AND NUTRITIONAL DISEASES	Male	Under 15	59.8	48.7	P > 0.20	NS		
		15 - 44	32.3	24.5	P > 0.20	NS		
		45 - 64	18.9	4.9	t = 1.09	PNS	P > 0.20	NS
		65 and over	23.3	9.0	t = 0.81	NS	P > 0.20	NS
		ALL	36.6	22.4	P > 0.20	NS		
	Female	Under 15	32.1	21.5	P > 0.20	NS		
		15 - 44	47.3	62.3	P > 0.20	NS		
		45 - 64	54.9	18.6	t = 1.77	PS	P > 0.10	PNS
		65 and over	97.8	20.4	t = 2.60	VS	P < 0.05	S
		ALL	51.2	32.3	P > 0.10	PNS		
	Both Sexes	Under 15	45.6	36.4	P > 0.20	NS		
		15 - 44	40.0	42.7	P > 0.20	NS		
		45 - 64	32.7	12.6	P > 0.10	PNS		
		65 and over	74.1	15.5	t = 2.95	VS	P < 0.01	HS
		ALL	42.6	27.5	P < 0.10	PS		

*, ** - See notes at end of table.

Table 23 (Contd.)

DISEASE GROUPS	SEX	AGE	MORBIDITY RATES VISITORS	MORBIDITY RATES PRACTICE PATIENTS	VALUE OF DIFFERENCE	LEVEL OF SIGNIFICANCE	VALUE OF P and LEVEL OF SIGNIFICANCE WHERE CHI-SQUARED INFLATED & SUSPECT	
4 DISEASES OF BLOOD AND BLOOD-FORMING ORGANS	Male	Under 15	-	-				
		15 - 44	-	6.1	t = 1.37	PNS	P > 0.20	NS
		45 - 64	3.8	-	t = 0.85	NS	P > 0.20	NS
		65 and over	-	9.0	t = 0.62	NS	P > 0.20	NS
		ALL	1.2	4.1	t = 0.92	NS	P > 0.20	NS
	Female	Under 15	-	5.4	t = 1.21	PNS	P > 0.20	NS
		15 - 44	6.8	23.0	t = 1.62	PS	P > 0.10	PNS
		45 - 64	-	11.2	t = 1.34	PNS	P > 0.20	NS
		65 and over	32.6	10.2	t = 0.86	NS	P > 0.20	NS
		ALL	6.2	13.3	P > 0.10	PNS		
	Both Sexes	Under 15	-	2.4	t = 0.77	NS	P > 0.20	NS
		15 - 44	3.5	14.2	P < 0.10	PS		
		45 - 64	2.3	6.3	t = 0.89	NS	P > 0.20	NS
		65 and over	22.2	9.7	P > 0.20	NS		
		ALL	3.7	8.8	P < 0.05	S		
5 MENTAL, PSYCHONEUROTIC AND PERSONALITY DISORDERS	Male	Under 15	8.5	22.1	t = 1.20	PNS	P > 0.20	NS
		15 - 44	21.5	21.4	P > 0.20	NS		
		45 - 64	3.8	-	t = 0.85	NS	P > 0.20	NS
		65 and over	23.3	9.0	t = 0.81	NS	P > 0.20	NS
		ALL	12.2	15.3	t = 0.60	NS	P > 0.20	NS
	Female	Under 15	-	5.4	t = 1.21	PNS	P > 0.20	NS
		15 - 44	37.2	19.7	P > 0.20	NS		
		45 - 64	18.3	37.2	t = 1.11	PNS	P > 0.20	NS
		65 and over	65.2	47.6	t = 0.26	NS	P > 0.20	NS
		ALL	25.0	29.4	P > 0.20	NS		
	Both Sexes	Under 15	4.1	14.6	t = 1.65	PS	P > 0.10	PNS
		15 - 44	29.6	20.6	P > 0.20	NS		
		45 - 64	9.3	21.1	P > 0.20	NS		
		65 and over	51.9	31.0	t = 0.76	NS	P > 0.20	NS
		ALL	18.5	22.1	P > 0.20	NS		

Table 23 (Contd.)

DISEASE GROUPS	SEX	AGE	MORBIDITY RATES		VALUE OF DIFFERENCE	LEVEL OF SIGNIFICANCE	VALUE OF P AND LEVEL OF SIGNIFICANCE WHERE CHI-SQUARED INFLATED & SUSPECT	
			VISITORS	PRACTICE PATIENTS				
6 DISEASES OF THE NERVOUS SYSTEM AND SENSE ORGANS	Male	Under 15	98.3	48.7	P < 0.10	PS		
		15 - 44	39.4	27.5	P > 0.20	NS		
		45 - 64	45.4	53.4	P > 0.20	NS		
		65 and over	23.3	76.6	t = 1.27	PNS	P > 0.20	NS
		ALL	61.0	49.9	P > 0.20	NS		
	Female	Under 15	76.3	53.8	P > 0.20	NS		
		15 - 44	33.8	32.8	P > 0.20	NS		
		45 - 64	73.2	44.6	P > 0.20	NS		
		65 and over	43.5	57.8	t = 0.95	NS	P > 0.20	NS
		ALL	56.2	46.5	P > 0.20	NS		
	Both Sexes	Under 15	87.0	51.0	P < 0.10	PS		
		15 - 44	36.5	30.1	P > 0.20	NS		
		45 - 64	56.1	48.4	P > 0.20	NS		
		65 and over	37.0	65.9	P > 0.10	PNS		
		ALL	57.4	47.7	P > 0.20	NS		
7 DISEASES OF THE CIRCULATORY SYSTEM	Male	Under 15	-	-				
		15 - 44	14.3	12.2	t = 0.22	NS	P > 0.20	NS
		45 - 64	30.3	9.7	t = 1.33	PNS	P > 0.20	NS
		65 and over	23.3	54.0	t = 0.86	NS	P > 0.20	NS
		ALL	17.1	18.3	P > 0.20	NS		
	Female	Under 15	-	-				
		15 - 44	16.9	23.0	P > 0.20	NS		
		45 - 64	42.7	29.7	P > 0.20	NS		
		65 and over	119.6	64.6	P > 0.20	NS		
		ALL	32.5	32.3	P > 0.20	NS		
	Both Sexes	Under 15	-	-				
		15 - 44	15.7	17.4	P > 0.20	NS		
		45 - 64	35.0	21.1	P > 0.20	NS		
		65 and over	88.9	60.1	P > 0.20	NS		
		ALL	22.2	25.6	P > 0.20	NS		

Table 23 (Contd.)

DISEASE GROUPS	SEX	AGE	MORBIDITY RATES: VISITORS	MORBIDITY RATES: PRACTICE PATIENTS	VALUE OF DIFFERENCE	LEVEL OF SIGNIFICANCE	VALUE OF P AND LEVEL OF SIGNIFICANCE WHERE CHI-SQUARED INFLATED & SUSPECT	
8 DISEASES OF THE RESPIRATORY SYSTEM	Male	Under 15	213.7	278.8	P > 0.10	PNS		
		15 - 44	132.6	110.1	P > 0.20	NS		
		45 - 64	68.2	29.1	P > 0.20	NS		
		65 and over	162.8	81.1	t = 1.68	PS	P > 0.10	PNS
		ALL	140.2	126.4	P > 0.20	NS		
	Female	Under 15	180.7	172.0	P > 0.20	NS		
		15 - 44	158.8	170.5	P > 0.20	NS		
		45 - 64	97.6	141.3	P > 0.10	PNS		
		65 and over	21.7	78.2	P < 0.10	PS		
		ALL	138.6	138.5	P > 0.20	NS		
	Both Sexes	Under 15	196.7	230.6	P > 0.10	PNS		
		15 - 44	146.1	139.2	P > 0.20	NS		
		45 - 64	79.4	92.6	P > 0.20	NS		
		65 and over	66.7	79.5	t = 0.50	NS	P > 0.20	NS
		ALL	137.0	131.7	P > 0.20	NS		
9 DISEASES OF THE DIGESTIVE SYSTEM	Male	Under 15	149.6	101.8	P > 0.20	NS		
		15 - 44	96.8	30.6	P < 0.10	HS		
		45 - 64	34.1	34.0	P > 0.20	NS		
		65 and over	46.5	63.1	t = 0.47	NS	P > 0.20	NS
		ALL	90.2	55.0	P < 0.05	S		
	Female	Under 15	156.6	112.9	P > 0.20	NS		
		15 - 44	145.3	108.2	P > 0.20	NS		
		45 - 64	97.6	55.8	P > 0.20	NS		
		65 and over	87.0	74.8	P > 0.20,	NS		
		ALL	132.3	86.3	P < 0.05	S		
	Both Sexes	Under 15	153.2	106.8	P < 0.10	PS		
		15 - 44	121.7	68.0	P < 0.01	HS		
		45 - 64	58.4	46.3	P > 0.20	NS		
		65 and over	74.1	69.8	P > 0.20	NS		
		ALL	110.4	71.3	P < 0.001	VHS		

Table 23 (Contd.)

DISEASE GROUPS	SEX	AGE	MORBIDITY RATES		VALUE OF DIFFERENCE	LEVEL OF SIGNIFICANCE	VALUE OF P AND LEVEL OF SIGNIFICANCE WHERE CHI-SQUARED INFLATED & SUSPECT	
			VISITORS	PRACTICE PATIENTS				
10 DISEASES OF THE GENITO-URINARY SYSTEM	Male	Under 15	8.5	8.8	t = 0.10	NS	P > 0.20	NS
		15 - 44	10.7	6.1	t = 0.67	NS	P > 0.20	NS
		45 - 64	11.4	-	t = 1.61	PS	P > 0.20	NS
		65 and over	-	31.5	t = 1.18	PNS	P > 0.20	NS
		ALL	9.8	11.2	P > 0.20	NS		
	Female	Under 15	8.0	5.4	t = 0.39	NS	P > 0.20	NS
		15 - 44	67.6	98.4	P > 0.10	PNS		
		45 - 64	42.7	29.7	P > 0.20	NS		
		65 and over	10.9	47.6	t = 1.59	PS	P > 0.10	PNS
		ALL	37.5	50.3	P > 0.10	PNS		
	Both Sexes	Under 15	8.3	7.3	t = 0.18	NS	P > 0.20	NS
		15 - 44	40.0	50.6	P > 0.20	NS		
		45 - 64	23.4	16.8	P > 0.20	NS		
		65 and over	7.4	40.7	t = 1.89	PS	P 0.10	PNS
		ALL	23.4	31.4	P > 0.10	PNS		
12 DISEASES OF SKIN AND CELLULAR TISSUE	Male	Under 15	34.2	44.2	P > 0.20	NS		
		15 - 44	32.3	36.7	P > 0.20	NS		
		45 - 64	11.4	29.1	t = 1.40	PNS	P > 0.20	NS
		65 and over	23.3	58.6	t = 0.95	NS	P > 0.20	NS
		ALL	29.3	41.8	P < 0.10	PS		
	Female	Under 15	52.2	48.4	P > 0.20	NS		
		15 - 44	70.9	42.6	P > 0.20	NS		
		45 - 64	42.7	18.6	t = 1.16	PNS	P > 0.20	NS
		65 and over	32.6	34.0	t = 0.59	NS	P > 0.20	NS
		ALL	56.2	36.1	P > 0.20	NS		
	Both Sexes	Under 15	43.5	46.1	P > 0.20	NS		
		15 - 44	52.2	39.6	P > 0.20	NS		
		45 - 64	23.4	23.2	P > 0.20	NS		
		65 and over	29.6	44.6	P > 0.20	NS		
		ALL	40.1	38.3	P > 0.20	NS		

Table 23 (Contd.)

DISEASE GROUPS	SEX	AGE	MORBIDITY RATES VISITORS	MORBIDITY RATES PRACTICE PATIENTS	VALUE OF DIFFERENCE	LEVEL OF SIGNIFICANCE	VALUE OF P AND LEVEL OF SIGNIFICANCE WHERE CHI-SQUARED INFLATED & SUSPECT	
13 DISEASES OF BONE AND ORGANS OF MOVEMENT	Male	Under 15	8.5	-	t = 1.37	PNS	P > 0.20	NS
		15 - 44	17.9	27.5	P > 0.20	NS		
		45 - 64	11.4	48.5	P < 0.05	S		
		65 and over	93.0	45.0	t = 1.29	PNS	P > 0.20	NS
		ALL	18.3	29.6	P > 0.10	PNS		
	Female	Under 15	-	-				
		15 - 44	16.9	16.4	t = 0.05	NS	P > 0.20	NS
		45 - 64	30.5	29.7	t = 0.33	NS	P > 0.20	NS
		65 and over	54.3	44.2	t = 0.03	NS	P > 0.20	NS
		ALL	20.0	24.7	P > 0.20	NS		
	Both Sexes	Under 15	4.1	-	t = 0.41	NS	P > 0.20	NS
		15 - 44	17.4	22.2	P > 0.20	NS		
		45 - 64	18.7	37.9	P < 0.10	PS		
		65 and over	66.7	44.6	P > 0.20	NS		
		ALL	17.9	27.0	P < 0.05	S		
17 ACCIDENTS, POISONING AND VIOLENCE	Male	Under 15	153.8	92.9	P < 0.10	PS		
		15 - 44	139.8	134.6	P > 0.20	NS		
		45 - 64	53.0	48.5	P > 0.20	NS		
		65 and over	116.3	58.6	t = 1.38	PNS	P > 0.20	NS
		ALL	117.1	89.7	P > 0.20	NS		
	Female	Under 15	80.3	96.8	P > 0.20	NS		
		15 - 44	155.4	75.4	P < 0.01	HS		
		45 - 64	128.0	78.1	P > 0.20	NS		
		65 and over	152.2	61.2	P > 0.10	PNS		
		ALL	129.8	76.8	P < 0.01	HS		
	Both Sexes	Under 15	115.9	94.7	P > 0.20	NS		
		15 - 44	147.8	106.0	P > 0.10	PNS		
		45 - 64	81.8	65.3	P > 0.20	NS		
		65 and over	140.7	60.1	P < 0.05	S		
		ALL	120.3	82.6	P < 0.01	HS		

Table 23 (Contd.)

DISEASE GROUPS	SEX	AGE	MORBIDITY RATES VISITORS	MORBIDITY RATES PRACTICE PATIENTS	VALUE OF DIFFERENCE	LEVEL OF SIGNIFICANCE	VALUE OF P AND LEVEL OF SIGNIFICANCE WHERE CHI-SQUARED INFLATED & SUSPECT	
18 PROPHYLACTIC PROCEDURES	Male	Under 15	21.4	97.3	P < 0.01	HS		
		15 - 44	14.3	64.2	P < 0.01	HS		
		45 - 64	11.4	9.7	t = 0.18	NS	P > 0.20	NS
		65 and over	-	36.0	t = 1.27	PNS	P > 0.20	NS
		ALL	14.6	54.0	P < 0.001	VHS		
	Female	Under 15	16.1	75.3	P < 0.01	HS		
		15 - 44	23.6	65.6	P < 0.05	S		
		45 - 64	-	29.7	t = 2.22	S	P < 0.10	PS
		65 and over	-	20.4	t = 1.38	PNS	P > 0.20	NS
		ALL	16.2	46.5	P < 0.001	VHS		
	Both Sexes	Under 15	18.6	87.4	P < 0.001	VHS		
		15 - 44	19.1	64.9	P < 0.001	VHS		
		45 - 64	7.0	21.1	P > 0.10	PNS		
		65 and over	-	27.1	t = 1.92	PS	P > 0.10	PNS
		ALL	14.2	49.6	P < 0.001	VHS		

* t - statistic formula:-

$$\sigma_{p1 - p2} = \sqrt{p1 + 2\,q\,1 + 2\,\frac{N1 + N2}{N1N2}} \quad \text{and } x = /p1 - p2/ \quad \therefore \quad \frac{x}{100\sigma} = t\text{ - statistic}$$

** Legend:- NS - not significant, PNS - probably not significant, PS - probably significant, S - significant, VS - very significant, HS - highly significant, VHS - very highly significant.

In male patients of all ages the rate for visitors is significantly increased for Gastro-intestinal diseases ($P < 0.05$), and that of the practice patients for Prophylactic procedures is predominant ($P < 0.001$) and that for Skin diseases is a probably significant ($P < 0.10$) increase.

The female visitors have a greater rate of Communicable and Gastro-intestinal diseases (for both $P < 0.05$) and a highly significant larger rate of Accidents etc. ($P < 0.01$). The only difference in which the female practice patients show a significant increase in rate, and that at the 0.1 % level, is in Prophylactic procedures.

When the new episodes are compared according to the subdivisions by age there is little difference between the visitors and the local population in the under 15 year old group. Taking both sexes together the slight predominance of visitors in Nervous System and Sense Organs diseases ($P < 0.10$) and Gastro-intestinal diseases ($P < 0.10$) and for the practice patients in the Mental and Psychoneurotic etc. diseases ($t = 1.65$) are all probably significant and the much larger rate for the practice patients for Prophylactic procedures has a level of significance at the 0.1% level.

In the boys there is a probably significant increase ($P < 0.10$) of Accidents etc. in the visitors, while there is a larger rate of Prophylactic procedures ($P < 0.01$) in the local patients.

There is only one significantly increased rate for the girls in this age group and that, again is a highly significant ($P < 0.01$) difference in favour of the practice patients in Prophylactic procedures.

Both sexes together in the 15-44 age group show the visitors predominate in Gastro-intestinal diseases ($P < 0.01$) and the practice patients in the Prophylactic procedures ($P < 0.001$) and probably significantly (at the 10 % level) in Diseases of the Bood and Blood-

forming organs.

The males of this group have a predominance of visitors with Gastro-intestinal diseases and of practice patients having Prophylactic procedures (in both $P < 0.01$).

The 15-44 old women visitors have a greater rate of Accidents ($P < 0.01$) and of Communicable diseases, but only at 10% level of significance; the practice patients have increased rates Prophylactic procedures ($P < 0.05$) and of Blood etc. diseases ($t = 1.62$).

Both sexes taken together in the 45 to 64 year old group have only one probably significant difference where there is a preponderance of practice patients with diseases of bone and organs of movement ($P < 0.10$).

In the male patients of this age group the visitors have a greater number of genito-urinary disease episodes which is probably significant ($t = 1.61$) and the practice patients an increase of the bone etc. diseases at the 5% level of significance.

Women visitors aged 45 to 64 have probably significant larger number of allergic etc. diseases ($t = 1.77$) and there being no episodes of prophylaxis in these patients the number of prophylactic procedures for the practice patients is significant ($t = 2.22$).

Visitor patients of age 65 and over have a very significant preponderance of allergic etc. disease ($t = 2.95$) and for accidents the greater number is significant ($P < 0.05$), both of these are for the two sexes together.

The men show only one difference and that at the 10 % level and it is in the respiratory diseases in which the visitors predominate ($t = 1.68$).

Women of this age again have a larger number of allergic etc. diseases which is very significant ($t = 2.60$) while the practice patients are

increased in comparison in respiratory and genito-urinary diseases and both these differences are probably significant, $P < 0.10$ and $t = 1.59$ respectively.

In Table 24 the morbidity rates for both visitors and practice patients, of both sexes and all ages together, are ranked in order of size.

Respiratory diseases, accidents etc., and digestive diseases head the lists in both types of patient. Diseases of the nervous system come next in visitors and next but one in practice patients prophylactic procedures being fourth for the latter.

Those rates in which there are signficant differences between visitors and practice patients have already been noted above and are greater rates for visitors for accidents etc., digestive diseases, allergic etc. diseases and communicable diseases, and lesser rates for prophylactic procedures, blood etc. diseases and diseases of bone and organs of movement.

Table 24. Morbidity Rates for both sexes and all ages ranked in order of size for visitors and Practice Patients.

Visitors		Practice Patients	
Disease Group	Rate	Disease Group	Rate
Respiratory Dis.	137.0	Respiratory Dis.	131.7
Accident	120.3	Accident	82.6
Digestive Dis.	110.4	Digestive Dis.	71.3
N.S. & Sense Organs	57.4	Prophylaxis	49.6
Allergy etc.	42.6	N.S. & Sense Organs	47.7
Skin Diseases	40.1	Skin Diseases	38.3
Genito Urinary Dis.	23.4	Genito Urinary	31.4
Circulatory Dis.	22.2	Allergy etc.	27.5
Communicable Dis.	20.4	Bone etc. Diseases	27.0
Mental etc. Dis.	18.5	Circulatory Disease	25.6
Bone etc. Diseases	17.9	Mental etc. Dis.	22.1
Prophylaxis	14.2	Communicable Dis.	11.3
Blood etc. Dis.	3.7	Blood etc. Dis.	8.8

CHAPTER EIGHT

DISCUSSION

Five questions were asked at the start of this study -

(1) What effect on work load do visitors have?

(2) From what illnesses and injuries do they suffer?

(3) In what way, if at all, does their morbidity differ from that of the local population, and if so, are there any particular groups at risk or any particular causes identifiable?

(4) Does the effect on work load require different or additional facilities?

(5) Are there any special problems of medical medico-social care?

These can now be answered and discussed.

What effect on work load do visitors have?

The care of visitors increases the work load of the practice and the increase is in the summer months of June, July, August and September, the visitors requiring just under 25% of the consultations in these four months. The peak of consultations by visitors is in July and August when over 30% of consultations are by visitors (Table 8).

Because of these visitors' consultations the practice as a whole is busiest in the summer months, usually in July and August, but June 1970 was not only the most busy month in that year but was only exceeded as that with the greatest number of consultations by July 1968 (Appendix 1).

The broadening base of the pyramid of visitors' consultations in the graph in Figure 6 shows that during these eight years there has been an increasing number of visitors seeking medical advice outwith the summer months. The number of such consultation rose from 59 in 1965 to 122 in 1972 (Appendix 1).

The changing proportion of the two main types of consultation, surgery attendances and home visits, have altered the pattern of the work of the practice. There have been an increasing proportion of attendances compared to visits from 1965 to 1972. This change has been more marked in the visitors than in the local patients, the former having a proportion of attendances to visits in 1965 of 1.26:1 and in 1972 of 3.70:1, while the latter had 0.64:1 in 1965 and 1.20:1 in 1972 (Table 10).

The graphs of the monthly number of each type of consultation in Figure 7 show that in the first three years (1965 - 68) visitors had approximately the same number of attendances as visits and the practice patients in the same three years had a consistently greater number of visits than attendances. In the last three years (1970-72) the number of visits to visitors had dropped considerably with a marked proponderance of surgery attendances while in the local population the number of visits was gradually overtaken by the number of attendances.

The most variable part of the practice work is in the care of patients in the hospital and this is especially so with the visitor patients, visits to whom varied between 7, in 1966, and 70, in 1969. (Table 11). In 2% of the episodes of illness of visitors in 1970 - 1972 admission to the Isle of Arran War Memorial Hospital was required and in 0.5% of episodes the patient was transferred or admitted direct to a mainland hospital. In another 2.6% of episodes an out-patient visit to the local hospital was

required usually for the advice or treatment by the surgeon or for x-ray examination (Table 12). In cases where an x-ray was required but not a surgical opinion I had to arrange to meet the patient at the hospital and act as radiographer, there being no such staff in this hospital. There is also no resident medical staff at the hospital, and each doctor is responsible for all items of medical care of a patient whose admission he has arranged, other than in surgical cases.

From what illnesses and injuries do they suffer?

I have found that when I meet colleagues from practice or hospital at meetings, on courses or on holiday on the island they show considerable interest in the life of the island medical practitioner. When, in discussion, I mention that I have a second practice in caring for a visiting population the reaction is often to assume that this is dealing with a few wasp-stings, some sprained ankles and diarrhoea. That these minor accidents and gastro-intestinal upsets are common there is no doubt but many other afflictions, minor and major, can affect the visitor.

If the percentages of new episodes, and also the morbidity rates for all ages for visitors, are ranked in order of size, (Tables 21 and 24) the largest disease group for both male and female patients in diseases of the respiratory system, second in the males is accidents etc. and in the females diseases of the digestive system. Third are digestive diseases in the males and accidents in the females and fourth for both sexes is diseases of the central nervous system and sense organs.

When the morbidity rates per 1000 at risk for each age group are taken separately (Table 23) the largest groups in the under 15 year olds are

respiratory disease in boys (213.7), respiratory disease in girls (172.0), digestive disease in girls (156.6) accidents (153.8) and digestive disease (149.6) both in boys.

In those aged 15 to 44 women with respiratory disease are most frequent (158.8) then accidents in women (155.5) and women with digestive diseases (145.3) followed by two groups of men, accidents (139.8) and respiratory diseases (132.6).

Women visitors aged 45 to 64 are the only group of visitors not having respiratory disease as the commonest complaint with this group it is accidents to women (128.0) then the respiratory diseases and digestive diseases in women (both at 97.6), diseases of the nervous system and sense organs in women (73.2) and men with respiratory disease (68.5).

At the age of 65 and over women with respiratory diseases (162.8) are again the largest group, accidents to women (152.2) are next and then circulatory diseases in women (119.3), men with accidents (116.3) and allergic, endocrine, metabolic and nutritional diseases in women (97.8).

Many of the episodes in each main diagnostic category were minor self-limiting diseases as can be seen in Table 14. This list is not a breakdown of the episodes used in the calculation of the morbidity rates which were the episodes in both visitor and practice patients in the months of June to September only, but is a list of all the new episodes recorded in 1970, 1971 and 1972. In this table pre-existing conditions in visitors are recorded as new episodes if these conditions were the cause of the consultation or if they in some way influenced the diagnosis or treatment of the presenting complaint.

Though there are a great number of relatively minor complaints in

this list there are a number of serious illnesses and it is with those seriously ill that many of the anxieties arise both for the patient and for the doctor and it is in these cases also that a large part of the working time can be expended.

The serious illnesses that have affected visitors in the years 1970 to 1972 have included meningitis, infective hepatitis, hypoglycaemia, schizophrenia, acute anxiety and/or depression, cerebral vascular accidents, coronary thrombosis, congestive heart failure, pneumonia, haematemesis and/or malaena, appendicitis, haemorrhages of pregnancy, premature labour, fractures of skull and of long bones, concussion and attempted suicide with barbiturate.

In the same period there were five deaths of visitors. These were a man aged 83 with congestive heart failure, a man aged 53 - sudden death helping a farmer with moving hay bales - probably coronary infarct, a man aged 49 - malignant melanoma with secondaries, a woman aged 71 - cerebral bascular accident and a woman aged 85 who had lain at least 12 hours on her bedroom floor, she had an injured hip but no fracture, she was found to have an intra-abdominal tumour, she developed left-sided heart failure and died on the third day.

In what way, if at all, does their morbidity differ from that of the local population and, if so, are there any particular groups at risk or any particular causes identifiable?

All the morbidity rates for both visitors and practice patients are set out in Table 23 in Chapter 7 along with the results of the tests of the significance of the differences between them. Those differences which are significant are summarised here.

Visitors who consulted me in 1970 to 1972 had 55% more gastro-intestinal

disease than the local population (a rate of 110 per 1000 to one of 71 per 1000), 55% more diseases in the allergic, endocrine, metabolic and nutritional disease group (43/1000 to 28/1000), 45% more accidents (120 to 83) and 82% more communicable diseases, though in this last category the number of cases (33 to 23) and the rates (20 to 11) were low. The practice patients had more prophylactic procedures (49 to 14) and more bone and locomotor system disease (27 to 18) and more blood diseases (9 to 4) but both these were also disease groups with a small number of cases.

For male and female patients separately, the rates per 1000 for gastro-intestinal disease were greater for the visitors than for the local people. The increase was 64% for the males (90 to 55) and 53% for the females (132 to 86). Female visitors had 69% more accidents than the locals (130 to 77). Practice male patients had 45% more skin complaints (42 to 29) but this difference is only significant at the 10% level. Both the male and female practice patients had a highly significant greater number of prophylactic procedures, the increase for the males being 260% (54 to 15) and for the females 194% (47 to 16).

When these major groups are divided into sub-groups by age there are differences in the morbidity rates between the visitors and the practice patients in most of the sub-groups and in a large proportion the differences are not statistically significant. However, there are a number with differences which are significant at levels of 5% up to 0.1%.

The disease/age/sex sub-groups in which the visitors rates are significantly greater are

Allergic etc. diseases - Women, aged 65 and over (98/1000 to 20/1000)

Digestive diseases - both sexes, 15 to 44 (128 to 68)
- men, 15 to 44 (97 to 31)

Accidents etc.	-	both sexes, 65 and over	(141 to 60)
	-	women, 15-44	(155 to 75)

The sub-groups in which the visitors had lesser rates are nearly all in one category,

Prophylactic procedures	-	both sexes, under 15	(19 to 87)
	-	boys, under 15	(21 to 97)
	-	girls, under 15	(16 to 75)
	-	both sexes, 15-44	(19 to 65)
	-	males, 15-44	(15 to 64)
	-	females 15-44	(24 to 66)
	-	women, 45-64	(0 to 30)
Diseases of bone etc.	-	men, 45-64	(11 to 49)

There are a number of disease/age/sex sub-groups which the differences are probably significant at the 10% level.

Those in which the visitors have greater rates than the practice patients are

Communicable diseases	-	females, 15-44	(30/1000 to 7/1000)
Allergy etc.	-	women, 45-64	(55 to 19)
Central Nervous System etc	-	both sexes, under 15	(87 to 51)
	-	boys, under 15	(98 to 49)
Respiratory Diseases	-	men, 65 and over	(163 to 81)
Digestive diseases	-	both sexes, under 15	(153 to 107)
Genito Urinary diseases	-	men, 45 - 64	(11 to 0)
Accidents etc.	-	boys, under 15	(154 to 93)

Those in which the visitors have smaller rates are

Communicable diseases	-	women, 45-64	(0 to 19)
Blood etc. diseases	-	both sexes, 15-44	(4 to 14)
	-	females 15-44	(7 to 23)
Mental etc. diseases	-	both sexes under 15	(4 to 15)
Respiratory diseases	-	women 65 and over	(22 to 78)
Genito Urinary diseases	-	both sexes 65 and over	(7 to 41)
	-	women 65 and over	(11 to 48)
Bone etc. diseases	-	both sexes 45-64	(19 to 38)
Prophylactic procedures	-	both sexes 65 and over	(0 to 27)

In all the other disease group/age/sex subgroups such differences as there are are not statistically significant.

Does the effect in workload require different or additional facilities?

There are plans to increase both private and local authority house building in the practice district, some of the houses will be for permanent residents and some will be at first holiday homes with owners hoping to retire later to live throughout the year. Both local and visiting populations are likely to rise and, as well as the increased demand for care from registered practice patients, so too will there be an increased number of visitor patients. As owners of holiday homes tend to visit their houses several times a year, there will be a greater demand from visitors both in and out of the holiday seasons.

These points have a relevance in planning the management of the practice. In past years the peak of work in high summer was regarded, rather as the doctor in urban practice accepts the heavy work in the early part of the year, as a time to postpone till later some of the routine procedures such as innoculations and screening and as certainly not a time for the doctor to take his own holiday. There was time for these in the quieter times. If, however, the summer peak gets higher and the work increases in the rest of the year then it might be necessary to employ assistance for part of the year and this would need to be in July and August and possibly also in June. This is the time when there is a big demand for locum-tenens and also the most difficult time to find accommodation or help in the house locally, with many people being employed seasonally in the tourist trade.

Another factor in considering the organisation is the changing

proportions of home visits and surgery attendances. This change has been more marked in the visitors than in the practice patients. With the age distribution of the local population being as it is and with the very poor transport facilities, it is certain that there will always be a higher proportion of home visiting in this type of practice than in those more compact and more populous. Even if the fall in home visiting continues for some time yet the amount of time taken will not fall pari passu as the distances to drive will not change. It takes not a great deal longer to visit six people eighteen miles away than it does to visit three.

Time spent in travelling to and attending my patients in the hospital can be considerable and, of course, can vary greatly from week to week depending on the number of patients admitted and the severity of the illnesses. It is time well spent as it makes it possible for patients to be cared for within their own community and saves a number of them from the need to leave the island for hospital care, and the visitor patient is able to be visited by other members of the family while they do not have to change their plans unless the patient has to be transferred to a specialist unit on the mainland.

The need to allot time in the working day and in the working week for home and hospital visits make it difficult to plan for increasing the number of periods for surgery consultations and this, at present, has the effect that consulting hours, especially in the summer, tend to get longer, lengthening the waiting time for patients and shortening the time available to the doctor for reading and recreation.

At present there is no need for additional medical staff except for the real need for some relief from the continuous on call responsibility. If the resident population increases and especially if it increases in the

more distant parts of the practice area or if the number of visitors increases, especially if there is an increasing number coming at times different from the traditional holiday months, then part-time medical help will be required.

There is now a need for increased ancillary help. I have been unable to employ a dispenser because the work does not justify the employment of a full time dispenser and there is no one available to undertake part-time duties. The increasing number of drugs require more time to be spent on stock control as well as the time spent on dispensing. Most of the patients, visitor or local, get their drugs at the time of consultation, having a dispenser available would shorten the consultation time per patient and make it possible to see more people in the consulting hours without increasing the waiting time for patients.

More assistance with the manning of the telephone has long been required. As in a great number of single-handed rural practices, the major part of this work is undertaken by the doctor's wife. She can get some relief for some of the time but is unable to leave the house without making prior arrangement. If, as a solution to the increasing waiting time by patients caused by the increasing number of people attending the surgeries, an appointments system were introduced then additional secretarial and telephone manning would be even more essential, with constant cover during normal office hours and during consulting hours. My present secretary comes on two afternoons each week and can in this time cope with filing, some of the correspondence, and with keeping the practice records up to date, but continuous manning 9 a.m. to 5 p.m. even for five days each week might require several part-time staff.

Unfortunately, in sparsely populated areas the level of staffing

which might be desirable may not be possible to achieve because there are no suitably qualified people available. This may especially be so where there is the possibility of seasonal employment.

There are no nurses attached to the practices in Arran, the reason for this is geographical, the nurses having large areas to cover and the two medical practices overlapping in many places. If patients are referred to a nurse for dressings or injections they are usually attended in their own homes, especially if they live in another village than the nurse. The nurse in Lochranza, which is 18 miles from the practice centre of each of the practices, is often able to visit patients to assess the need for the doctor to visit or to make follow up visits, in fact patients, both local and visiting, often ask for her advice on whether they should call a doctor as a first step. The district nurses all undertake triple duties as being the health visitor and midwife as well as the district nurse. There is no need for additional nursing help in the practice as a result of the influx of visitors.

Are there any special problems of medico-social care?

Some of the problems that can arise are common to both visiting and local patients. These are distances to be travelled by both patients and doctor, poor or absent public transport making it difficult or impossible for people to attend at the surgery at times when there is a consulting session, the one hour long crossing to the mainland by sea with the possibility of delay or cancellation of the service in bad weather and the lack of full hospital facilities requiring that some patients, and often the most seriously ill, have to make a long journey to a specialist unit or, if transfer carries too great a risk, of being cared for away from access to intensive care units, laboratory services, consultant opinion and specialist

radiology services.

These are facts of life familiar to the local residents even if not always accepted and they are accustomed to the uncertainties that life in an island environment entails. Many of the visitors especially those who have come over a number of years, also accept the life but there are some to whom the isolation from the amenities of large urban centres adds to the normal anxieties of being ill in a strange place.

These are problems of communication in the geographical sense and are a cause of worry in many cases of illness. Problems arising from difficulties with communication person to person occur frequently with the visitors, these can be between patient and doctor, between doctor and patient and between doctor and doctor. Mainly this difficulty in communication is due to lack of information.

Probably the most common difficulty for the doctor or his staff is in attempting to decide the degree of illness or of its urgency when dealing on the telephone with a patient about whom nothing is known. The amount of anxiety and the amount of pressure for immediate attention can be found to be greater than the severity of the illness warrants, naturally there is greater worry when illness occurs away from home and most people go on holiday with no thought that common illnesses such as acute upper respiratory tract infections are just as likely to affect them or their children as they are at home, naturally a patient does not want to stay in bed ill missing the holiday activities and possibly requiring that other members of the family also become house or hotel bound to attend to them and so there is sometimes pressure for instant relief of symptoms. There are problems of a non medical nature sometimes when a person takes ill at the end of a stay and is not fit to travel home but whose accommodation is due to be given up, if the patient

is seriously ill hospital admission can be arranged but the rest of the family has to be found somewhere to stay or has to go home leaving the patient to be transferred home later. The need for the least possible interference with the holiday causes some patients to press for out of hours attention which is not justified by the medical severity of the illness and on several occasions the demand for such attention has been found to be due to the possible inability to take part in a social or sporting occasion such as a golf competition.

The use of drug names in the labelling of drug containers has reduced one problem of lack of knowledge, that of what medicines a patient had been taking but people do come away from home with the supply of two or three different drugs all in the same bottle. Some are easily recognised but even with a colour index some are difficult or impossible to identify with accuracy. This can raise worries of drug interaction if other therapy is indicated.

With those who are, or who might, be seriously ill, lack of information on the diagnosis in a patient becoming ill and who has had a pre-existing illness can cause difficulties in management. I was called to one such patient, a man who had had for the first time in his life a major epileptic fit, he was unconscious and recently had had brain surgery but his wife did not know what had been done. A telephone call had to be made in the late evening to the neuro-surgeon at his home in Newcastle-on-Tyne to discover that an astrocytoma had been removed and to arrange for his readmission to his wards. The patient was transferred by ambulance the next day.

Lack of knowledge of the patient's background is rarely so acute as in the case of Mrs. C., the American who may have been schizophrenic, described in Chapter 6 but it is often to a lesser extent a difficulty when trying to distinguish between physical and psychoneurotic illness, as with Mrs. E. in whom the early signs of congestive heart failure presented as an anxiety neurosis.

Very few patients present with a letter from their own doctor, except possibly if there is a need to remove stitches or continue a course of injections, and, of course, very few patients go to their doctor before going on holiday for the express purpose of letting him know, very rarely have I been asked by a patient of my own to provide a note that would be of help to another doctor should it be needed. In cases in which it has been necessary to let a visitor's doctor know of some new illness or complication arising when under my care I have written direct to the doctor and not sent case notes, through the National Health Service administrative channels. I have noticed that doctors notes about my own patients who have been ill when away from home have taken many weeks to reach me, usually too long after the patient's return home for the information to be of use in continued management of the illness. I wrote 50 such letters and three others to hospital consultants in the 1314 new episodes of illness in 1970-1972, the consultant surgeon also wrote letters about a number of the cases he saw as out-patients or as in-patients. (Table 12).

The effect of the visitors illnesses and injuries on the use of beds in the island hospital has at times led to great overcrowding. At the beginning of the period covered by this study the hospital had officially twelve general beds and five maternity beds, though for most of the year, even in the winter, at least two extra general beds were occupied and at the height of the summer season on several occasions seventeen or eighteen patients were accommodated, with beds in the corridors, in the operating theatre and even one made up on the table in the X-ray room.

When a new extension was being requested and planned in 1966 to 1972 (24) a study had to be undertaken to decide the necessary bed complement

required for the island population. As well as the appropriate number of beds per head of the resident population for acute medical cases, accident and acute surgical cases and for short and long stay geriatric cases it was necessary to review the admissions over the previous five or six years to discover the number of visitors treated as in-patients and the number of patient/days this part of the hospital work represented. It was decided that the minimum of beds required was six of which two or three was the requirement for visitors. The Western Regional Hospital Board finally decided to build two four-bed wards and the extra facilities that the extra beds required and conditions for both patients and staff are now much improved.

There are a number of practices in the counties of Argyll and Bute with a roughly similar number of patients and also with a considerable number of claims for the treatment of visitors (Table 2). There are a number of areas in Scotland in which there is a similar distribution of population and with a relatively large number of visitors who require medical treatment (Table 1). In these practices the effect of the morbidity of visitors may well be the same as in this practice with, of course, variations due to, the different activities of both the local people and of the visiting population. For instance the increased accident rate with the increased development of ski-ing in the Cairngorms has been documented by Macdonald and Walker (1) and shows the effect on the work of a practice due to the holiday activity of the visitors to the mountains in the practice area.

There is an increasing effort being made to increase the number of tourists in many areas of Scotland, and not only to attract more people but also to lengthen the season over which they come. In many areas this is a large influx in relation to the size of the local population. In the cities and in many towns, such as the coastal resorts, these visitors tend

to be concentrated in hotels and boarding houses within easy reach of doctors' consulting rooms and hospitals. In rural areas they tend to be spread throughout the scattered practices. In Scotland it is mainly the rural areas which have the greater number of illness of visitors in relation to the size of the local population (Table 1).

It is likely that the number of claims made for the treatment of temporary residents under-estimates the number of visitors seeking treatment. A number will be treated as private patients especially those in hotels in the cities and those from abroad; this may be the reason why a much visited city such as Edinburgh seems to have a small number of claims. Even in Arran quite a number of visitors go direct to the hospital and this will no doubt be the method by which many seek treatment in other areas of the country and if these patients are not referred to a general practitioner no claim form will be sent and so again the number of claims does not give the number of visitors who were ill or injured when away from home.

Another cause of underestimation of the number can occur in the most rural of practices. In these practices where the doctor has an inducement payment all sources of professional income, private and NHS, are taken into consideration in assessing his need for an inducement. I know from my own experience and from talking to other doctors in such practices that there is a tendency when pressed for time, on night visits or when treating several members of a family at the same time, not to fill up all possible claim forms. As it makes no difference to income it is easier and quicker to concentrate on the clinical and avoid the clerical chores.

There is a possibility of over-estimation of the number of visitors needing actual advice or treatment in some places where there are convalescent

homes. Certain business concerns, charitable organisations and trade unions run their own convalescent homes and some of these require that their patients be seen early in their stay by a doctor, they are in the recovery period from sickness or injury and, if a form is completed, become the responsibility of the local doctor, but at the time of their examination may require no advice or treatment. In some resorts these convalescents may swell the number of TR claims submitted.

Not all visitors are tourists and in many parts of the country at present there is a great increase in population, permanent, semi-permanent or temporary, engaged in industry. The number, location and length of stay of these work forces is more easily judged than tourist traffic and their arrival can be foreseen through the normal planning procedures and steps taken to provide the necessary health service needs along with the other services.

The number of claims made by doctors for the treatment of visitors gives only the number of patients who have consulted that doctor, or at least the number for whom he has claimed, it gives no indication how often the patients have been seen. From 1965 to 1972 the number of doctor-patient contacts in my practice varied between 1.3 and 1.5 per visitor patient (Table 9).

In attempting to apply the experience of this practice to other areas and other practices difficulties arise in a number of forms the main variables are the differing work patterns of doctors, the differing consulting patterns in one part of the country from another, the varying length of stay and the varying activities of visitors from heavy construction work and skiing at one end of the scale to the almost completely sedentary bus tour at the other.

A wide range of consultation rates is given for a number of individual practices in the "Present State and Future Needs of General Practice" (23) the

range being, in the practices from which average figures over for a number of years are available, from 2.8 per annum in Fry's practice to 6.5 per annum in Yellowlees'. My practice has an average rate for 1965 to 1972 of 6.1 for all doctor-patient contacts and of 5.7 if visits for the treatment of patients in hospital are excluded (Table 9). The different work pattern of fourteen practices is also set out in tables of the annual number of surgery attendances and home visits per person. These show a considerable variation between practices the extremes being 20 surgery attendances to 1 home visit (J. Fry in 1971) to 0.6 to 1 (Yellowlees in 1961 and 1962). Only two practices had over a number of years a greater number of home visits than surgery attendances and these were this practice and that of Yellowless in Aberfeldy, another Scottish rural practice.

The variation of work load and work pattern will reflect a large number of differing factors, the situation from densely populated urban to scattered rural, the age sex structure of the population, the availability and use of ancillary help by the doctors, the extent of self referral of patients to local casualty departments, the possibility of the continuing care of patients for follow-up or prophylactic procedures at hospital and local authority clinics, the availability and suitability of local transport, the consulting habits of the population and the extent to which individual doctors have attempted to alter old-established patterns and, of course, the varying methods of working of the doctors themselves.

Because the visitors are an incoming population and only stay for a short time- they cannot be treated as temporary residents if intending to stay for more than three months - it is unlikely that they will be much influenced by the attitudes to illness and its management adopted by the local people and the local doctor. It can be assumed, then, that the number of doctor-patient

contacts in this practice, 1.4 per visitor patient if hospital visits are excluded, could be general for all visitor patients. This would suggest that the average annual number of consultations by visitors in Scotland in the years 1966 to 1972 was over 250,000 (179,360 x 1.4 = 251,104) and that 22% of these (39,600 x 1.4 = 55,440) were in the more rural part of the country in which there were only 5% of the registered National Health Service patients (Table 1).

The survey of the morbidity of the visitors in this study shows that in 1970 to 1972 they had a greater rate of episodes of communicable diseases, of digestive diseases, of allergic, endocrine, metabolic and nutritional diseases and of accidents than the local population and also that they had lesser rates of prophylactic procedures, blood diseases and locomotor system diseases. The visitors did not, however, have overall any significantly different rates of episodes in the other diseases groups. Their rates for respiratory diseases, which was the disease group in which were the largest rates for both visitors and practice patients, circulatory diseases, skin diseases, genito-urinary diseases and psychoneurotic disorders showed only minor differences in rates from the local patients in some of the age/sex sub-groups.

The visitors suffered a number of serious, and sometimes fatal diseases which required a considerable amount of care in a practice which does not have easy access to full hospital facilities.

Although a considerable amount of the illness of visitors is of a minor nature it adds considerably to the work of the general practitioner and those who are seriously ill require a considerable expenditure of time and the use of services which may have been planned only for the levels expected to be required by the local population.

APPENDIX 1

MONTHLY NUMBER OF DIRECT CONSULTATIONS 1965 - 1972

Year	Month	Visitors	Practice	Total
1965	Jan.	3	256	259
	Feb.		285	285
	Mar.	5	356	361
	Apr.	16	344	360
	May	20	347	367
	June	53	293	346
	July	126	284	410
	Aug.	115	288	403
	Sept.	38	270	308
	Oct.	3	288	291
	Nov.		249	249
	Dec.	2	294	296
1966	Jan.	4	287	291
	Feb.	5	288	293
	Mar.	1	322	323
	Apr.	9	354	363
	May	17	378	395
	June	54	314	368
	July	164	311	475
	Aug.	149	341	490
	Sept.	27	334	361
	Oct.	10	358	368
	Nov.	10	374	384
	Dec.	6	342	348
1967	Jan.	10	405	415
	Feb.	1	368	369
	Mar.	7	350	357
	Apr.	7	299	306
	May	29	391	420
	June	79	333	412
	July	138	352	490
	Aug.	152	362	514
	Sept.	58	372	430
	Oct.	3	321	324
	Nov.	11	352	363
	Dec.	9	334	343

Appendix 1 (Cont'd)

Year	Month	Visitors	Practice	Total
1968	Jan.	6	363	369
	Feb.	4	378	382
	Mar.	12	397	409
	Apr.	28	379	407
	May	19	442	461
	June	121	387	508
	July	167	407	575
	Aug.	183	355	538
	Sept.	60	336	396
	Oct.	5	278	283
	Nov.	2	329	331
	Dec.	2	357	359
1969	Jan.	6	427	433
	Feb.	3	384	387
	Mar.	16	373	389
	Apr.	21	389	410
	May	27	377	404
	June	92	331	423
	July	116	329	445
	Aug.	77	325	402
	Sept.	43	359	402
	Oct.	17	297	314
	Nov.	26	343	369
	Dec.	13	339	352
1970	Jan.	7	418	425
	Feb.	7	323	330
	Mar.	16	440	456
	Apr.	28	356	384
	May	23	408	431
	June	110	460	570
	July	173	341	514
	Aug.	174	335	509
	Sept.	55	388	423
	Oct.	20	339	359
	Nov.	2	351	353
	Dec.	4	365	369

Appendix 1 (Cont'd)

Year	Month	Visitors	Practice	Total
1971	Jan.	4	329	333
	Feb.	2	310	312
	Mar.	9	417	426
	Apr.	24	355	379
	May	26	419	445
	June	72	317	389
	July	149	378	527
	Aug.	125	288	413
	Sept.	47	347	394
	Oct.	10	317	327
	Nov.	6	356	362
	Dec.	1	290	291
1972	Jan.	7	315	322
	Feb.	1	332	333
	Mar.	10	317	327
	Apr.	27	271	298
	May	38	344	382
	June	64	312	376
	July	148	293	441
	Aug.	145	246	391
	Sept.	50	341	391
	Oct.	19	291	310
	Nov.	5	331	336
	Dec.	15	367	382

APPENDIX 2

MONTHLY NUMBER OF SURGERY ATTENDANCES AND HOME VISITS OF VISITORS 1965 - 1972

Year	Month	Surgery	Home
1965	Jan.	-	3
	Feb.	-	-
	Mar.	5	-
	Apr.	8	8
	May	16	4
	June	28	21
	July	67	50
	Aug.	60	48
	Sept.	13	21
	Oct.	1	2
	Nov.	-	-
	Dec.	1	1
1966	Jan.	2	2
	Feb.	-	5
	Mar.	1	-
	Apr.	7	2
	May	1	16
	June	19	33
	July	79	85
	Aug.	83	63
	Sept.	13	14
	Oct.	2	8
	Nov.	5	5
	Dec.	3	1
1967	Jan.	-	10
	Feb.	-	1
	Mar.	5	2
	Apr.	1	6
	May	15	13
	June	29	45
	July	64	64
	Aug.	83	57
	Sept.	26	19
	Oct.	-	3
	Nov.	-	4
	Dec.	5	3

Appendix 2 (Cont'd)

Year	Month	Surgery	Home
1968	Jan.	5	1
	Feb.	3	1
	Mar.	4	4
	Apr.	12	13
	May	14	3
	June	52	61
	July	109	47
	Aug.	109	72
	Sept.	18	20
	Oct.	1	4
	Nov.	1	1
	Dec.	1	1
1969	Jan.	1	3
	Feb.	1	2
	Mar.	2	12
	Apr.	10	11
	May	5	18
	June	45	19
	July	66	39
	Aug.	54	23
	Sept.	15	19
	Oct.	13	4
	Nov.	7	5
	Dec.	9	4
1970	Jan.	3	4
	Feb.	1	6
	Mar.	10	6
	Apr.	14	10
	May	16	7
	June	68	27
	July	99	48
	Aug.	131	41
	Sept.	31	16
	Oct.	6	14
	Nov.	2	-
	Dec.	4	-

Appendix 2 (Cont'd)

Year	Month	Surgery	Home
1971	Jan.	4	-
	Feb.	1	1
	Mar.	4	2
	Apr.	15	5
	May	13	11
	June	45	24
	July	116	28
	Aug.	89	25
	Sept.	33	14
	Oct.	5	5
	Nov.	-	6
	Dec.	1	-
1972	Jan.	4	3
	Feb.	-	1
	Mar.	9	1
	Apr.	19	8
	May	22	15
	June	52	11
	July	126	19
	Aug.	113	29
	Sept.	40	10
	Oct.	12	7
	Nov.	4	1
	Dec.	9	6

APPENDIX 3

MONTHLY NUMBER OF SURGERY ATTENDANCES AND HOME VISITS OF PRACTICE PATIENTS 1965 - 1972

Year	Month	Surgery	Home
1965	Jan.	105	153
	Feb.	101	142
	Mar.	98	202
	Apr.	115	153
	May	112	176
	June	98	167
	July	109	150
	Aug.	103	152
	Sept.	95	150
	Oct.	121	153
	Nov.	79	158
	Dec.	99	166
1966	Jan.	93	177
	Feb.	76	172
	Mar.	111	163
	Apr.	113	194
	May	126	191
	June	105	178
	July	112	170
	Aug.	147	184
	Sept.	106	192
	Oct.	111	190
	Nov.	126	180
	Dec.	120	201
1967	Jan.	123	272
	Feb.	117	238
	Mar.	133	204
	Apr.	115	170
	May	122	225
	June	125	187
	July	136	207
	Aug.	145	201
	Sept.	146	201
	Oct.	128	186
	Nov.	123	183
	Dec.	139	175

Appendix 3 (Cont'd)

Year	Month	Surgery	Home
1968	Jan.	115	200
	Feb.	146	197
	Mar.	163	220
	Apr.	134	236
	May	186	235
	June	153	210
	July	168	219
	Aug.	158	176
	Sept.	139	184
	Oct.	136	127
	Nov.	151	163
	Dec.	128	215
1969	Jan.	189	205
	Feb.	179	189
	Mar.	156	207
	Apr.	153	208
	May	164	203
	June	159	159
	July	143	147
	Aug.	147	156
	Sept.	144	199
	Oct.	151	129
	Nov.	173	158
	Dec.	159	170
1970	Jan.	163	235
	Feb.	140	152
	Mar.	169	226
	Apr.	143	209
	May	187	189
	June	216	212
	July	173	146
	Aug.	152	151
	Sept.	158	192
	Oct.	159	170
	Nov.	139	188
	Dec.	138	179

Appendix 3 (Cont'd)

Year	Month	Surgery	Home
1971	Jan.	143	149
	Feb.	122	137
	Mar.	187	164
	Apr.	179	150
	May	171	172
	June	133	130
	July	189	147
	Aug.	134	126
	Sept.	150	179
	Oct.	150	159
	Nov.	165	173
	Dec.	153	111
1972	Jan.	113	180
	Feb.	179	128
	Mar.	167	117
	Apr.	154	110
	May	155	171
	June	187	110
	July	181	101
	Aug.	137	90
	Sept.	157	172
	Oct.	125	134
	Nov.	158	127
	Dec.	171	126

APPENDIX 4

METHOD OF ESTIMATION OF VISITOR POPULATION AT RISK

I am indebted to Dr. D.L. Crombie, O.B.E., Director of the General Practice Research Unit of the Royal College of General Practitioners, Birmingham for suggesting this method and to Mr. A. Nicol, Statistician, Scottish General Practitioner Research Support Unit, Dundee for help in working out the details of applying the method to my figures.

A visitor can stay on the island one night or three months (there is only one intending day visitor in the survey and she was admitted to the hospital under my care for a week) and so the calculation of a morbidity rate per annum is a purely arbitary figure, but if an equivalent population number for visitors can be estimated then the morbidity of the visitors and the local practice population can be compared.

Firstly we have to assume that the visitors' morbidity and their threshold for seeking consultation are more or less the same as those for the practice population. The visitors are 97% from the U.K. and 75% domiciled in Scotland (Table 7) so national difference in consultation habits will not have an undue influence. If we take new episode morbidity rather than total of doctor/patient contacts and if we take the number of these episodes for the summer months of June to September, which is when the number of new episodes for each group is roughly the same then there is a greater possibility that the consultation pattern will be similar.

If the number in each age/sex sub-group were greater it would be possible to use a much shorter time than four summer months for three years, and if, for instance, a period of one week could have been used the likelihood of the consultation pattern of the two groups being similar would have been

been very much greater.

Making the assumption that the new episode morbidity is the same for both groups and knowing the number of episodes for both groups and the size of the practice list population at risk we can calculate the equivalent visitor population at risk.

The number of episodes for each age/sex/morbidity sub-group in the summer months for 1970 - 1972 is given in Tables 23A and 23B. However, a number of the visitors presented with illnesses which although they were new episodes to my practice were in fact continuing episodes already under treatment before coming to the island (Table 13). The details of the correction of the visitors' episodes in each age/sex sub-group are given below.

The calculation of the visitor population at risk can be formulated as follows:-

Object - to compare $\frac{Mv}{PRv}$ with $\frac{Mp}{PRp}$ it is necessary to know PRv.

$$PRv = \frac{cMv}{Mp} \times PRp$$ by age and sex where necessary.

Where Mv = visitors' new episode morbidity
Mp = practice list new episode morbidity
(each of these being morbidity in toto or any subtotal)
PRv = Visitor population at risk
PRp = Practice list population at risk
c = Correction factor to visitor morbidity because of episodes already started elsewhere.

From the practice Age/Sex Register the Practice Population at Risk in the age/sex sub-groups is illustrated in Table 25.

The calculation of Correction Factor to be applied to summer visitors episodes to obtain true new episode morbidity is illustrated in Table 26.

The new episodes for visitors in each disease group/age/sex category were then multiplied by the correction factor for each age/sex group to give the corrected number of new episodes for the comparison of

Table 25 Practice Population at Risk

Age/Sex Sub-Group / Year	1970	1971	1972	Total
Males				
0 - 14	82	75	69	226
15 - 44	106	109	112	327
45 - 64	73	68	65	206
65 +	61	83	78	222
Total				981
Females				
0 - 14	63	66	57	186
15 - 44	92	103	110	305
45 - 64	92	92	85	269
65 +	93	103	98	294
Total				1054
Total both sexes				2035

Table 26 Calculation of Correction Factor

AGE/SEX Sub-group	No. of Episodes	No. Pre-existing	% Pre-existing	Correction Factor
Male				
0 - 14	186	5	2.6882	.97312
15 - 44	160	17	10.625	.89375
45 - 64	83	13	15.6623	.84337
65 +	23	1	4.3478	.95652
Female				
0 - 14	163	5	3.0674	.96933
15 - 44	251	11	4.3825	.95618
45 - 64	103	13	12.6214	.87379
65 +	67	15	22.3881	.77612

the morbidity rates and to give the estimated population at risk for the visitors.

The corrected new episodes are set out in Table 27 and the calculation of the visitor population at risk in Table 28.

Table 27 Visitors new episodes after application of correction factor.

Disease Group	Age	Male 0-14	15-44	45-64	65+	All	Female 0-14	15-44	45-64	65+	All
1		8	1	3	0	12	11	9	0	1	21
2		0	1	0	0	1	1	0	0	0	1
3		14	8	4	1	27	8	13	8	7	36
4		0	0	1	0	1	0	2	0	2	4
5		2	5	1	1	9	0	11	3	5	19
6		22	10	10	1	43	18	10	11	3	42
7		0	4	7	1	12	0	5	6	9	20
8		49	33	15	7	104	44	45	14	2	105
9		34	24	8	2	68	38	41	14	6	99
10		2	3	3	0	8	2	19	6	1	28
11								11			11
12		8	8	3	1	20	13	20	6	2	41
13		2	5	3	4	14	0	5	4	4	13
14		1	2	0	0	3	0	0	0	0	0
15		0	0	0	0	0	1	0	0	0	1
16		0	2	0	0	2	0	0	0	0	0
17		35	35	12	5	87	19	44	18	11	92
18		5	4	3	0	12	4	7	0	0	11
Total		181	145	73	23	422	159	242	90	53	544

Table 28 Calculation of Visitor Population at Risk - PRv

Age Group	Male		Female		Both sexes
0 - 14	$\frac{181}{175} \times 226 = 234$		$\frac{159}{119} \times 186 = 249$		483
15 - 44	$\frac{145}{170} \times 327 = 279$		$\frac{242}{249} \times 305 = 296$		575
45 - 64	$\frac{73}{57} \times 206 = 264$		$\frac{90}{148} \times 269 = 164$		428
65 +	$\frac{23}{120} \times 222 = 43$		$\frac{53}{170} \times 294 = 92$		135
Total		820		801	1621

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